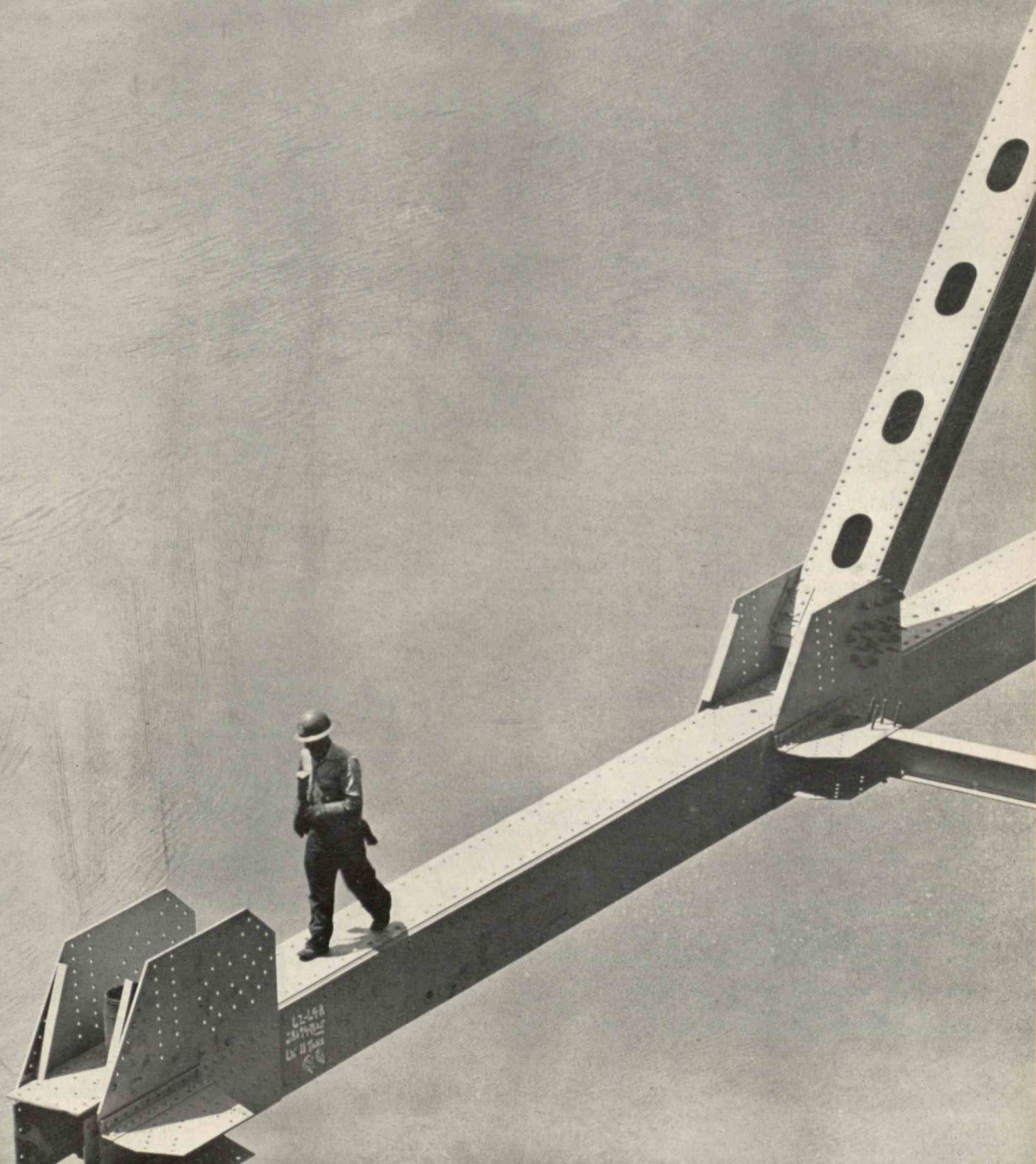


TECHNOLOGY

REVIEW

June

1952



technology review

Published by MIT

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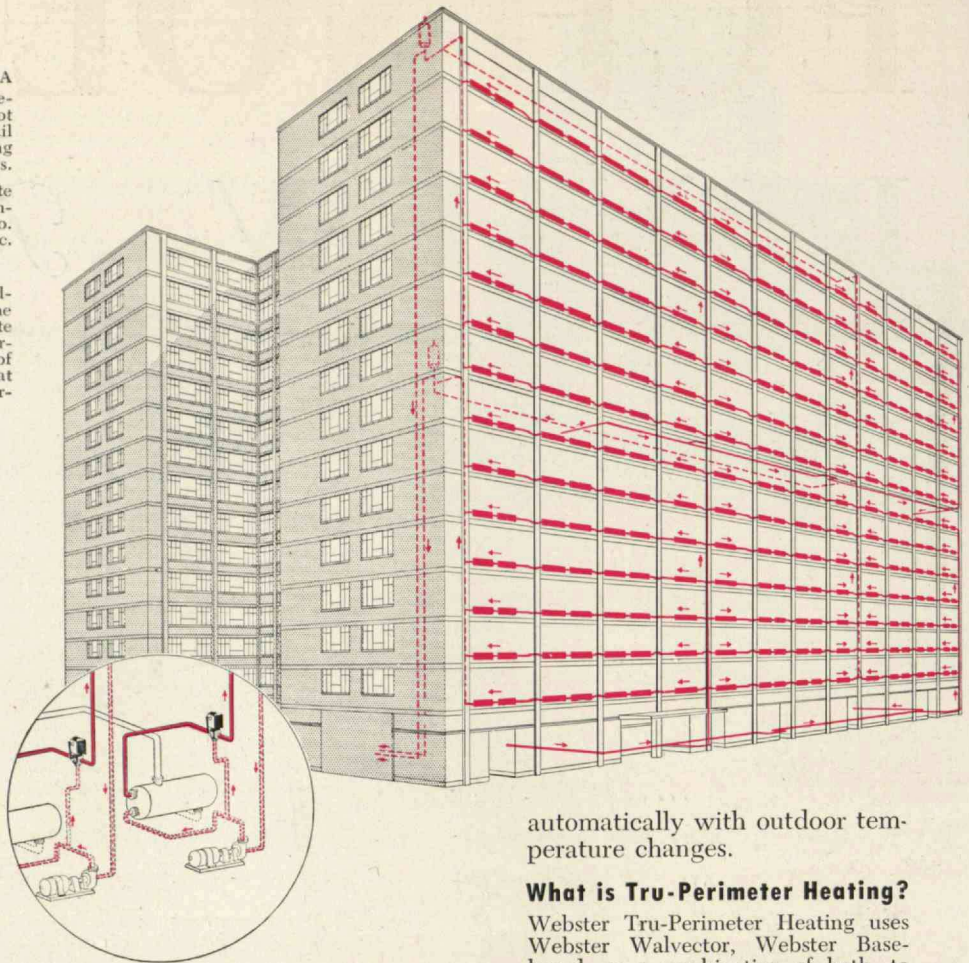
FLAMINGO APARTMENTS
1220 N. BROAD ST., PHILADELPHIA

Diagrammatic view showing piping arrangement for Webster Tru-Perimeter forced hot water heating. Inset shows basement detail with heat exchangers, pumps and mixing valves for Webster Continuous Flow Controls.

Architect: John H. Graham, A.I.A. Associate
Architect: Sweet and Schwartz, A.I.A. General Contractor: Turner Construction Co.
Heating Contractor: Benjamin Lessner Co., Inc.

MECHANICAL DESIGN NOTES

Only four risers across entire front of building. Two-zones—one serving floors 2 to 8, the other floors 9 to 15, each with separate Webster CF-2 Control and Outdoor Thermostat. Each zone vented to tank at top of zone—no individual room vents. Two heat exchangers and circulating pumps all interconnected.



Perimeter Heating

For 15-Story Flamingo Apartment Building

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(3) All connections concealed in continuous Walvector enclosures (see photo), customary runouts completely eliminated.

(4) Neat, attractive, out of the way, matches modern architectural style.

(5) Continuous draft-free, mild heat blanketing the almost all-glass exposure. Water temperature varied

automatically with outdoor temperature changes.

What is Tru-Perimeter Heating?

Webster Tru-Perimeter Heating uses Webster Walvector, Webster Baseboard, or a combination of both, to replace the heat at the perimeter where heat loss occurs. Heating elements are mounted close to the floor along outside walls, spreading the heat the entire length of the exposed walls.

Webster Tru-Perimeter Heating warms the air within a room, warms the floors and warms the inside surface of outside walls where a normal coolness occurs during winter months. Gently moving warm air is drawn to floor level and across the floor into the inlet opening of the radiation. Radiant heat rays strike the floor along the full length of the exposed wall. Floors are warm and comfortable even with slab floor construction.

Webster Tru-Perimeter results are obtainable with either forced hot water or Moderator controlled low pressure steam heating. For further information about Webster Tru-Perimeter Heating for a new building or modernization see your Webster representative or write us.

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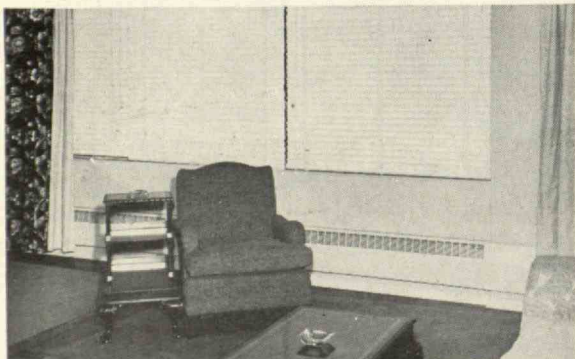
Camden 5, N. J. Representatives in Principal U. S. Cities
In Canada, Darling Brothers, Limited, Montreal

Webster

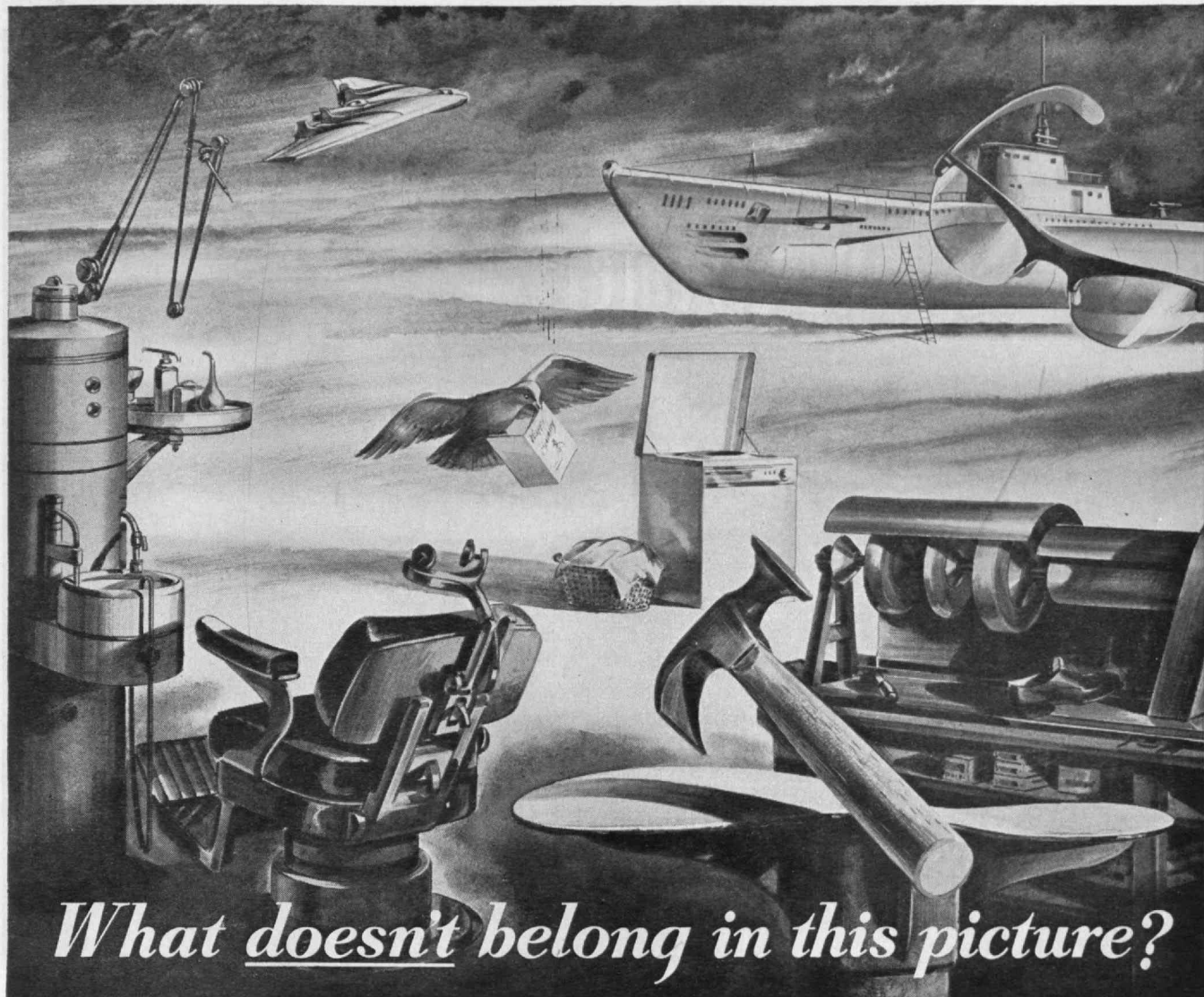
WALVECTOR

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Living room in typical apartment showing Webster Walvector.



What doesn't belong in this picture?

All but one of the objects in this picture have something in common. They were affected directly or indirectly by the kind of products Norton and Behr-Manning make. *Can you find the stranger?*

The Shoe Repair Equipment? No! Many operations in a shoe repair shop depend on Norton and Behr-Manning abrasive products. Behr-Manning coated abrasives, for instance, are used to shape and finish heels and soles.

The Submarine? No! Hundreds of its parts depend on Norton or Behr-Manning products. Its camshafts are just one of the many diesel motor parts precision ground by Norton grinding machines and abrasive wheels.

The Greeting Card? No! Norton or Behr-Manning abrasive products are vitally important in manufactur-

ing both paper and printing presses.

Neither Is It the flying wing, the eyeglasses, the washing machine, nor the dentist's equipment.

The stranger in the picture is the bird, which does not rely on man-made products. Remember, any man-made product . . . whether of metal, wood, paper, cloth, leather, ceramics, or plastics . . . depends on abrasives, abrasive products, refractories, or grinding machines that bear such well-known trade-marks as Norton and Behr-Manning . . . world's largest manufacturers of abrasives and abrasive products.



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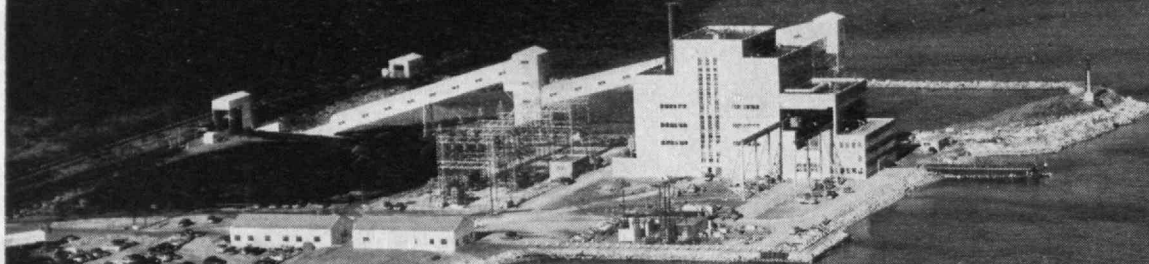


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Danskammer



"*De Duyfels Dans Kammer!*" cried one of Henry Hudson's crew as the little Half Moon rounded a bend in the river and approached a large, flat rock on which a band of Indians were holding a ceremonial war dance around a huge fire. It must, indeed, have seemed a "Devil's Dance Chamber"... and it is still called that today... Danskammer.

Last December flames flared again at the Devil's Dance Chamber when a large C-E Boiler was lighted off at the new Danskammer Point power plant of the Central Hudson Gas & Electric Corporation. If Henry Hudson's crew could have looked in on that scene, what a fire they would have witnessed—masses of flames, at temperatures as high as 3000° F., spiralling up through a furnace more than seven stories high.

The starting up of Danskammer was an event of special significance to Combustion Engineering—Superheater because it marked the completion of the Company's 1951 work in so far as new utility power stations were concerned. It was the last of nine new stations equipped with C-E Boilers to go into service during the year. The aggregate capacity of these stations, if used only for residential service, would meet the needs of more than fifteen million people. And this is only part of the story, for many more C-E Boilers were installed in 1951 in existing utility stations than in new plants.

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Hawthorn Station,
Kansas City Power & Light Company
Ninemile Point Station,
Louisiana Power & Light Company
Edge Moor Station,
Delaware Power & Light Company
Palatka Station,
Florida Power & Light Company
Johnsonville Station,
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Danskammer Point Station,
Central Hudson Gas & Electric Corporation

B-564

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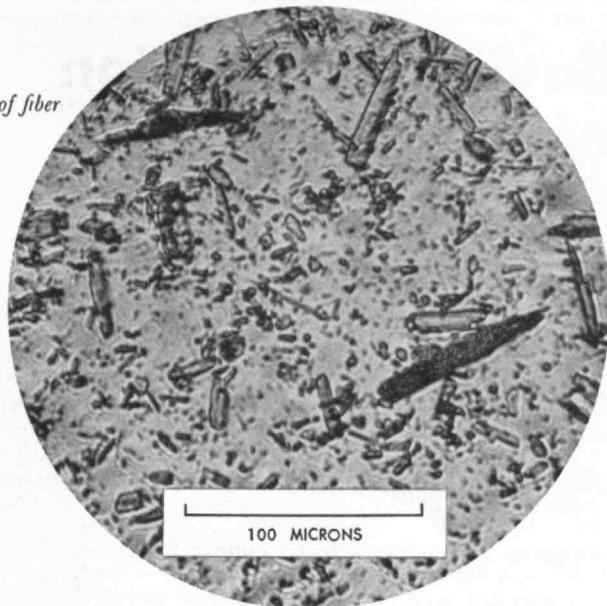
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MR. ROBERT E. McQUISTON,
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The photographs show the range of fiber length obtainable in wollastonite.



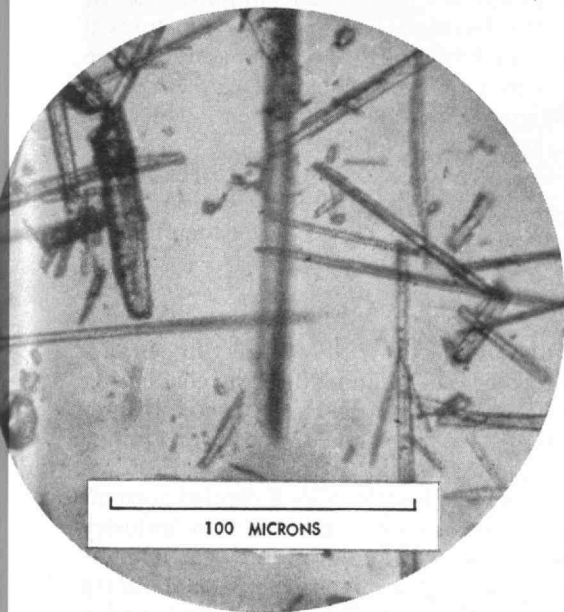
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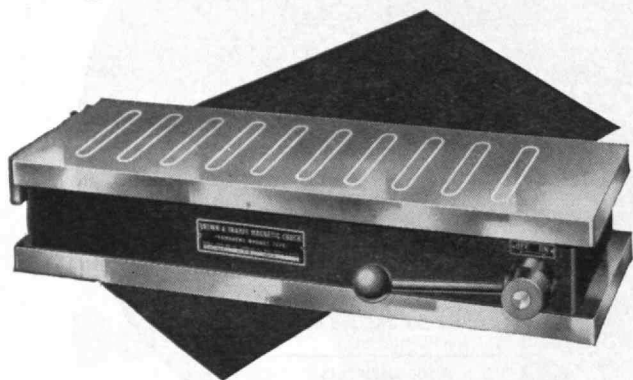
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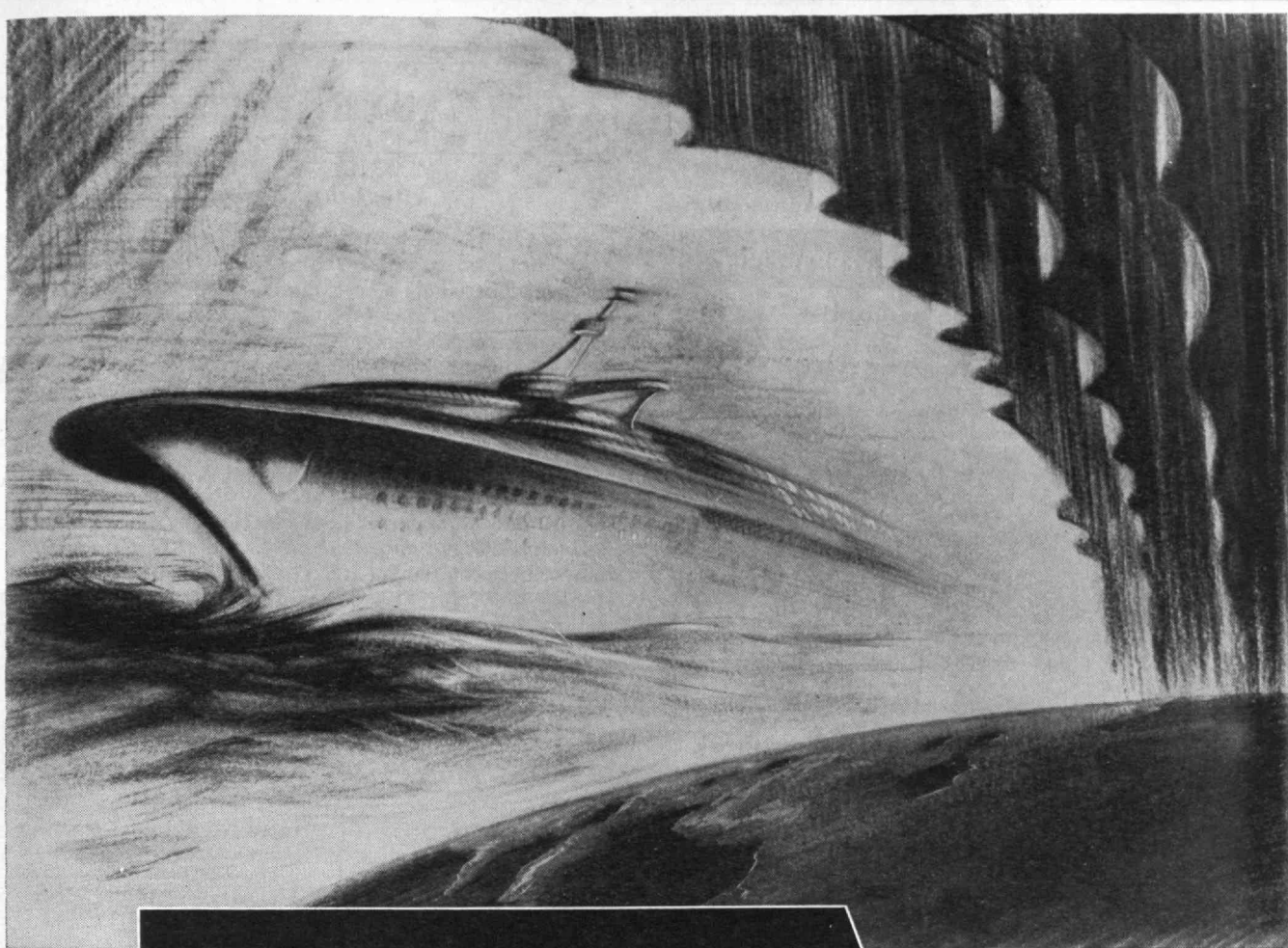
DIEFENDORF
G E A R S

THE TABULAR VIEW

Killian's Millions. — On May 3, 1951, more than 1,000 leading industrialists, educators, and distinguished representatives of the professions gathered at the Waldorf-Astoria Hotel in New York to attend a victory dinner marking the successful completion of the \$20,000,000 campaign of the Institute's Development Program. Precisely a year later — with \$25,668,532 in the safe custody of Joseph J. Snyder, 2-44, Treasurer — JAMES R. KILLIAN, JR., '26, President, reviews the benefits planned, or already accomplished, as a result of the effective financial assistance which the Institute has received through Alumni, corporations, trusts, and its many loyal friends. President Killian's report to Technology Alumni (page 407) gives ample assurance that "Killian's Millions" have been wisely employed to widen the scope and strengthen the resources of M.I.T. The Institute's educational program has been strengthened, new co-operative relationships have been opened up with industry, additional buildings and facilities have enabled M.I.T. to embark on new and important fields of research, the Institute has made strides toward becoming a residential college, the humanities have been elevated to a fourth School, a fifth School has been brought into being, and cultural activities have been encouraged as never before. The changes wrought at Technology because of the Development Program may well make any Alumnus proud of the auspicious leadership which has been manifest so early in the presidency of Dr. Killian.

Bunker Hill's Quarry Mill. — Eleven decades ago this month, Charlestown celebrated the completion of the Bunker Hill Monument. In the concluding portion of a two-part article, E. H. CAMERON, '13, relates (page 419) how the Yankee granite of Quincy supplied the gray stone blocks for the Charlestown shrine. Mr. Cameron also provides a careful account of progress in the American construction industry when the monument was being built. A vast experience in civil engineering, an extensive personal library on engineering in the post-Civil War period, and a decade as head of the Technical Publications Division of Jackson and Moreland, consulting engineers, enable Mr. Cameron to write with authority.

Seward's Steward. — Co-operation on an international basis is not as new as myopic isolationists might prefer to believe. Indeed, in the Civil War period, Secretary Seward greatly encouraged international cooperation on monetary matters and sent Samuel B. Ruggles to Europe for this purpose, as D. G. BRINTON THOMPSON, '23, reminds us (page 423). Professor Thompson received the A.B. degree from the University of Pennsylvania in 1920, the S.B. degree from M.I.T. in 1923, and the Ph.D. degree from Columbia University in 1945. Between 1924 and 1941 he was in industry, and taught at Lafayette College from 1943 to 1945. Since 1945 he has been at Trinity College, in Hartford, where he is Northam professor of history and chairman of the department.



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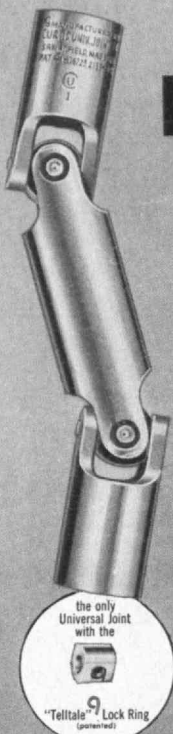
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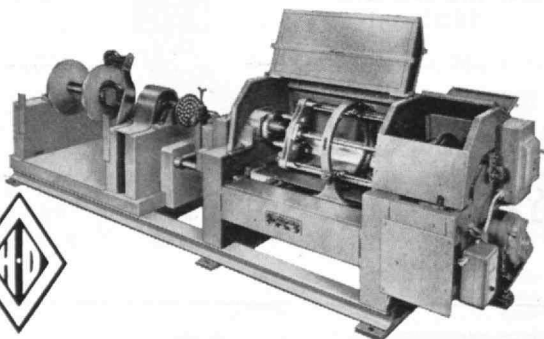
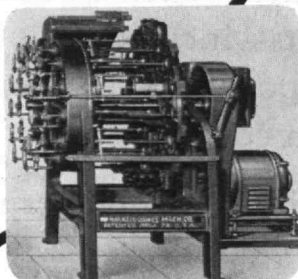
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MAIL RETURNS

The John Mason

FROM J. NEWELL STEPHENSON, '09:

Mr. Brainerd's article, "Stepbrother to the Iron Horse," which appeared in the March, 1952, issue of The Review, interested me very much. My grandfather, John Stephenson, made that first streetcar. It was called the *John Mason* and, according to the centenary program on the radio in 1932, ran cross-town on 34th Street. He made the first cable cars in New York. He also made coaches, busses, and some railway coaches.

I have grandfather's indenture as a carriage-maker's apprentice. He had his own shop by 1832. His letterhead showed the car on page 241 of The Review.

Hector Clergue once told me the story of the electric railway between Bangor and Veazie, Maine, in the 1880's. It used direct current and cars often stalled on the hill for lack of power until other cars stopped. There were frequent and serious breaks in the water line across the river to Brewer. A professor from Philadelphia found that current leakage from the power plant, which was near the pipe line, was causing electrolytic corrosion. Clergue said this was the discovery of that phenomenon.

Gardenvale, Quebec

Blow, Wind!

FROM VIKING ENEBUSKE, '15:

Having climbed the Bunker Hill Monument twice, once before I went to Tech and the last time in 1947, I was especially interested in the article "Of Yankee Granite," by E. H. Cameron (May, 1952, Review), and made some calculations of my own, based entirely upon information in The Review, and arrived at a soil pressure of 4.8 tons per square foot, which is within 4 per cent of the figure the author quoted. The thickness of walls and the interior I guessed at for the top and mid-sections.

It is self-evident that the Bunker Hill Monument could only tip over due to soil settlement, even if a hurricane exceeded wind pressures allowed by the Boston Building Code.

Boston, Mass.



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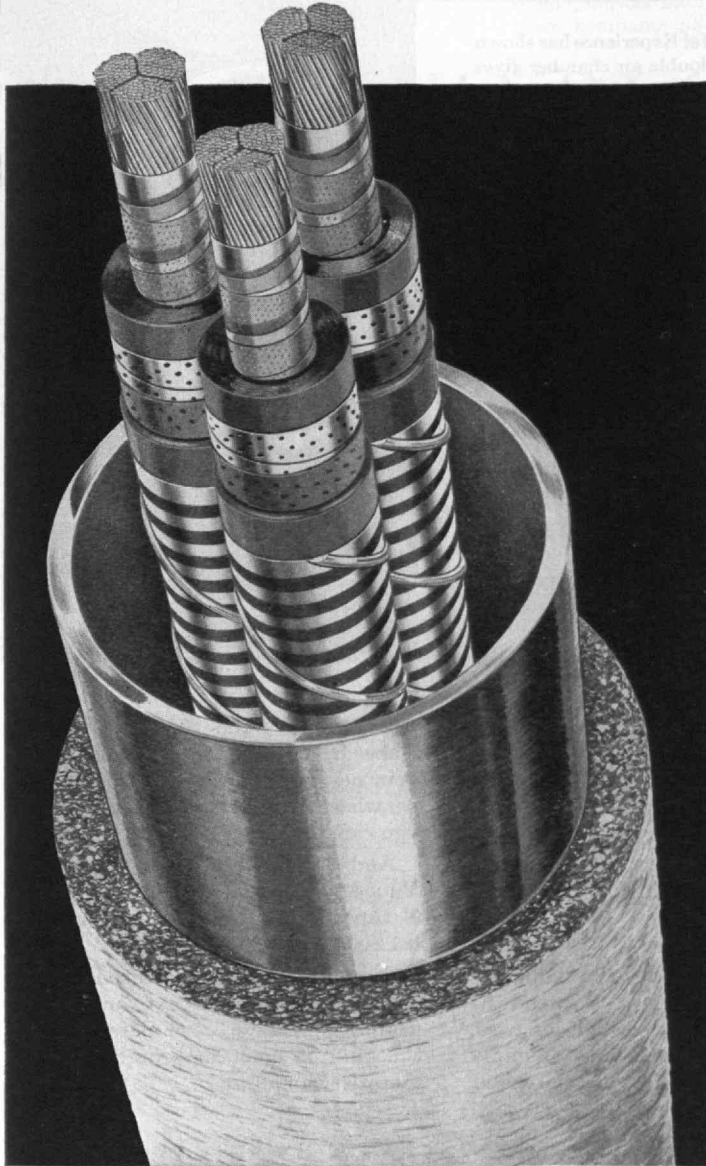
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It was designed and manufactured by Phelps Dodge Copper Products Corporation for the U. S. Air Force for installation at the Arnold Engineering Development Center in Tennessee.

Of particular interest is the impervious polyethylene sheath which was selected after a study of all available types because of the protection it provides against contamination during the pulling-in process, its ease of installation and its permanent protection to the cable insulation throughout the operating life of the cable.

Arrangement of testing equipment at the Center required that the main substation receiving the power supply from the transmission system feed four other substations. The feeders had to be underground because continual movement of large jet aircraft under test prohibited the use of overhead lines.

The total circuit length of installation is approximately 8,000 feet. One complete transformation was saved by continuing voltage to substations at incoming supply level. Thus the installation demonstrates again the economy and practicability of transmitting extra high voltage power via the compression cable system.

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THE TECHNOLOGY REVIEW

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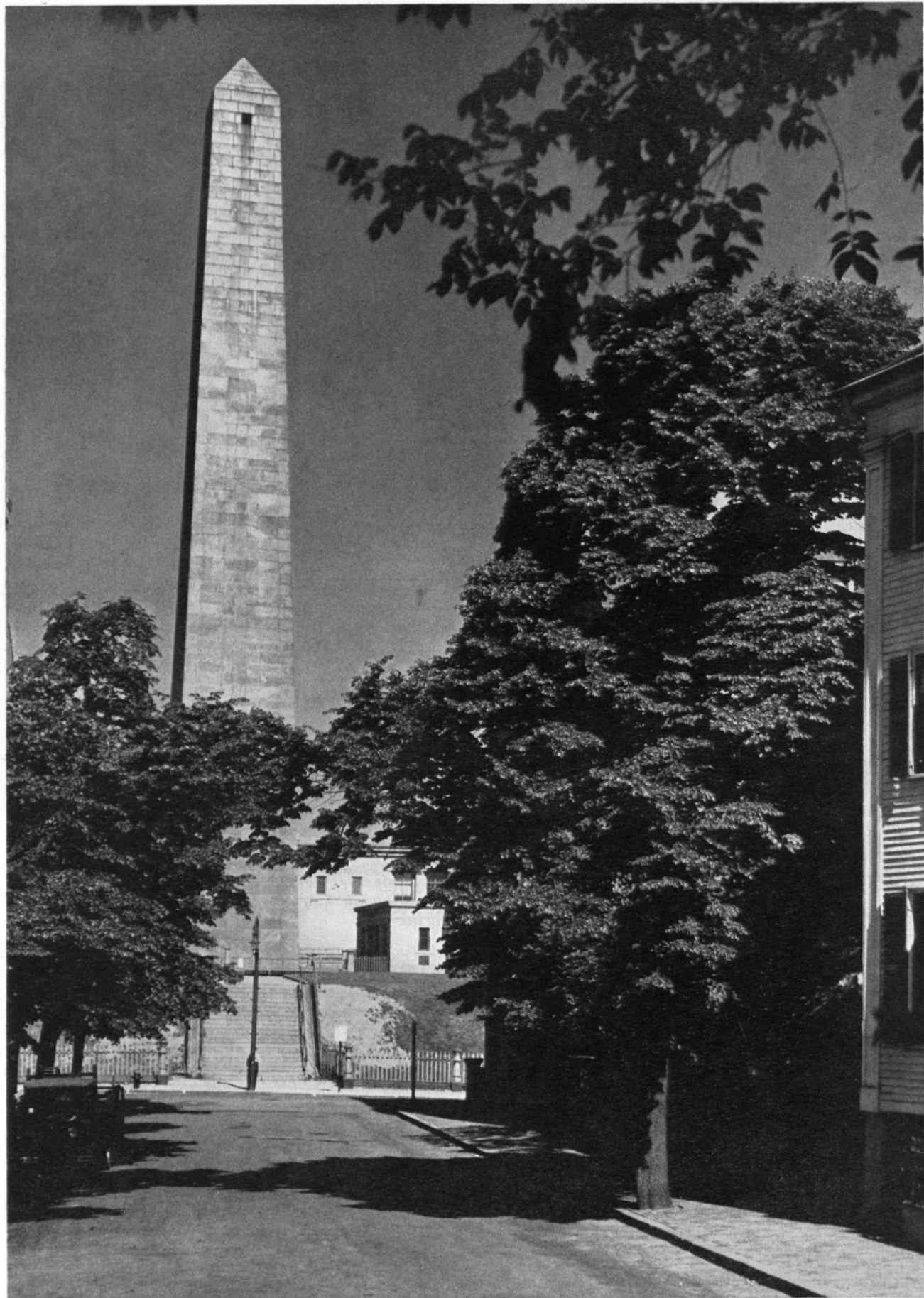
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Samuel V. Chamberlain, '18

Today — as 110 years ago when its construction was completed — the Bunker Hill Monument is a symbol of the stern spirit of those who fought in the battle for American independence. The rugged solidity of the monument (described in the article by engineer and writer E. H. Cameron, '13) is reflected in this modern photograph by artist Samuel V. Chamberlain, '18.

THE TECHNOLOGY REVIEW

Vol. 54, No. 8



June, 1952

The Trend of Affairs

Man-Made Mouse

AN electrical mouse with a man-made super-memory is busily at work these days, repeatedly threading its way through a series of complicated mazes at the Bell Telephone Laboratories. The handiwork of Claude E. Shannon, '40, the mouse uses for its "brain" some of the same kind of switching relays found in dial telephone systems. The reason it exists, in fact, is to provide fundamental knowledge which will help improve telephone service.

The mouse, in reality a two-inch bar magnet with three wheels and copper whiskers, can quickly solve more than a billion different mazes, learning each new one rapidly, then instantly forgetting it in order to be ready to learn the next one. Its goal, which Dr. Shannon refers to as "a piece of cheese," is really an electrical terminal with a bell which rings when the mouse nudges it with its copper whiskers.

Dr. Shannon has built his maze about half the size of a desk top. It has aluminum fences which can be rearranged at will in 40 different slots to create the hardest possible problems for the mouse. The mouse is placed at some arbitrary point in the maze and the "cheese" at a different arbitrary point. After a brief pause to get its bearings, the mouse goes scuttling up and down corridors, bumping into walls, backing up and turning and exploring until — a minute or two later — it finds the cheese and rings the bell.

Then comes its most interesting performance. Having learned the correct path to the cheese, the mouse can now be set down at any point that it visited during its explorations and, without making a single false move, it will proceed directly to the goal in 12 to 15 seconds. If it is placed in a part of the maze not previously visited, it will explore about until it reaches a known part and then move directly to the cheese.

After this, if the maze is altered, the mouse will have to learn the new paths by further exploration, but it

will readily remember those parts of the path which remain unchanged.

When it is set down on the metal floor of the maze, the mouse trips an electric switch which signals its position to a mechanism under the floor. A motor-driven electromagnet moves swiftly to the spot directly beneath the mouse and from then on holds it in a magnetic grasp. The magnet turns through a 90-degree angle, carrying the mouse with it, then guiding it forward. If the mouse hits a barrier and, by means of its copper whiskers, detects that it is in a dead end, the magnet will back away, shift the mouse to another direction, and start it forward to try again to find an open path. The magnet makes successive attempts until it finds the way to the goal. Then it remembers the successful path and can solve the maze directly without error.

To regulate the sequence of movement, Dr. Shannon has built what is called a "programming" circuit, consisting of 40 electrical relays. Another part of the mouse's "brain," which serves as its memory, contains 50 relays. Two small motors complete the equipment.

By working with such problem-solving equipment, Dr. Shannon, who several years ago announced a plan whereby a computer could be made to play chess, hopes to learn more about what man can do with machines. Many of the techniques by which machines are able to remember are being applied in the Bell System in dial switching, automatic accounting, and other equipment. The real significance of this mouse and maze lies in the four rather unusual operations it is able to perform. It has the ability to solve a problem by trial and error means, remember a solution and apply it when necessary at a later date, add new information to the solution already remembered, and forget one solution and learn a new one when the problem is changed.

Dr. Shannon is a graduate of the University of Michigan and holds both a master's and a doctor's

degree from the Institute. He has been with the Bell Laboratories since 1941. In 1940 he won the Alfred Noble Prize of the American Institute of Electrical Engineers, and in 1949 the Institute of Radio Engineers presented him with its annual Morris Liebmann Memorial Prize.

Quiet, Please!

ONE of the fundamental tasks of the scientist working in the field of architectural acoustics is to provide good hearing conditions within lecture rooms, concert halls, and other living spaces. The control and adjustment of the internal acoustical properties of the room form one aspect of this problem. Another is presented by the need, which is usually present, for acoustically isolating the room from unwanted external noises and sound.

The degree of sound reduction secured with most commonly used wall-construction types is chiefly dependent on their weight. As a consequence, economic and structural reasons frequently tend to discourage the utilization of walls which give the appropriate acoustic isolation. Conditions of inadequate acoustic isolation are often found and tolerated in otherwise well-designed and constructed buildings. Particularly in the field of multiple apartment construction, the use of light partition walls is a constant source of annoyance to the occupants, who are, as a result, subjected to the irritating intrusion of sounds from a variety of sources.

In the belief that a better knowledge of the processes, whereby sound is attenuated by wall structures, may eventually lead to the evolution of constructions and materials having a higher isolation efficiency than is now obtainable, a research program in the problems of sound transmission through wall panels is now in progress in the Acoustics Laboratory at M.I.T. This program, sponsored by the Office of Naval Research, is under the direction of Professor Richard H. Bolt, Director of the Acoustics Laboratory, and Leo L. Beranek, Technical Director of the Acoustics Laboratory, assisted by Albert D. Frost, research assistant in the Department of Physics.

In the past, the insulation values of various wall types have been commonly established by an indirect measurement of the fractional energy transfer between two specially constructed reverberant rooms, acoustically coupled only by a single common wall composed of the material to be tested. A high intensity sound source, such as a group of loud-

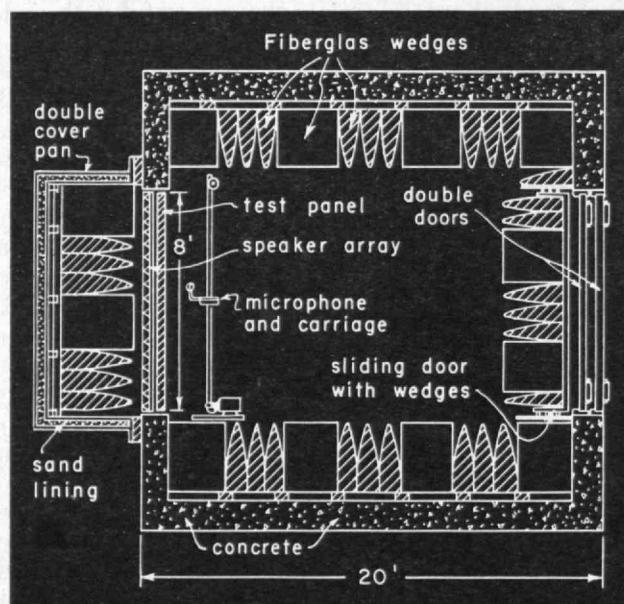
speakers, is located in one of the rooms. With the aid of several calibrated microphones, located in each room, the average sound levels are determined. From these values and a knowledge of the absorption characteristics of the receiving room, the effect of the panel in attenuating sound incident upon it may be evaluated. This method forms the basis on which most of our present-day performance data on the acoustical insulation properties of walls have been secured. For the theoretical interpretation of the results, it is assumed that a statistically diffuse sound field exists in both rooms; a condition which seldom exists in practice.

The completion of an anechoic test chamber at the Acoustics Laboratory of M.I.T. makes possible research using new procedures on wall panels up to eight feet square. These present interesting possibilities for securing information of great significance. With the anechoic chamber and better facilities now available, studies are being made on the radiation of sound by wall panels into an anechoic (echo-free) space, when driven by a plane wave. The incident plane wave is simulated by the combined action of 256 electrically identical loud-speakers. The experimental environment can be controlled and specified to a higher degree of precision than is at present possible with reverberation chambers. In addition, it represents a situation that is more tractable from the point of view of the mathematical analysis of the results.

A panel to be tested is placed in an aperture in the foot-thick concrete wall of the test chamber, and the plane wave source sealed behind it. The inner surfaces of the test chamber have been made highly absorbent by the installation of a large number of specially designed wedges. These have the effect of reducing the reflections from the walls to a negligible level and permitting the sound field, radiated directly from the panel, to be measured without those interfering effects which would arise if internal reflection

were permitted to exist. Using a microphone in a carriage remotely positioned outside of the chamber, it is possible to measure and record the amplitude and relative phase of the sound field at any desired point behind the test panel. From the radiation pattern so obtained, it is hoped that a more meaningful evaluation of panel. From the radiation derived and, in addition, an insight be gained into the basic factors which control the mechanism of sound absorption in walls.

This basic study of the transmission of sound makes its contributions to less noisy homes and offices.



Floor plan of anechoic chamber in which the transmission of sound through panels is studied. The test panel is supported at the left of the soundproof room.



Funding M.I.T.'s Future

A Review of the Accomplishments of the \$20,000,000 Drive

By JAMES R. KILLIAN, JR.

MI.T. emerged from World War II with a new sense of mission. No one familiar with its wartime history could have failed to agree with President Compton that the war record of M.I.T. "dramatically spotlighted the importance of an institution of this kind to industry, to government, and to the national welfare generally." The Institute's wartime contribution as a great research center was, perhaps, not unexpected. Its contribution in furnishing leadership in the war effort indicated a significant change in the kind of responsibility which the engineer and scientist must now assume. At the same time, the technological opportunities opened up during the war had made it imperative that new equipment and facilities be provided if M.I.T. were to maintain its place of leadership as a technological institution.

It was a "time of decision" for the Institute. It was a time for careful but bold planning. In the early postwar years the Executive Committee of the Corporation initiated a survey of the Institute's most pressing needs. These needs, in turn, depended to a large extent on the Institute's educational program, and it was evident that this, too, called for a reassessment. In January of 1947 the Faculty appointed the Committee on Educational Survey to review the educational objectives of the Institute. This committee spent two years on its study. Meanwhile, a Survey Committee was established by the Corporation to determine M.I.T.'s financial requirements and recommend ways of meeting them.

Two important conclusions emerged from these studies and discussions:

1. That the Institute should keep its student body limited in size, although larger than prewar, and offer a quality education, both undergraduate and graduate, to those young people best prepared to benefit from it — an education which would combine superb professional experience with the best possible general education. This was a reaffirmation of M.I.T.'s long-standing educational philosophy.

2. That the Institute should and could obtain greatly increased support from private sources, including individuals, foundations, and industry, and that the solicitation of this support required a large-scale and sustained effort.

Together, these decisions represented an act of faith. It was an expression of our belief that the educational ideals of democracy would still command impressive support; that the people of this country would re-

spond to the need for providing its most gifted young people in the fields of science and engineering with the educational facilities which would enable them to develop their full powers. It expressed our belief that American industrialists and businessmen were prepared to help provide successors for themselves who could keep our progress as a nation commensurate with our opportunities as the foremost industrial democracy of the world.

This faith has been more than justified by the results of our Development Fund Drive.

New Friends and New Finances

Between January 1, 1948, and June 30, 1951, the period of our intensive Development Fund Drive, 10,632 individuals (8 per cent non-alumni), 266 corporations, and 34 foundations made contributions to M.I.T. The amount contributed or pledged in this period was \$25,668,532. Approximately 26 per cent of this total was from corporations, 24 per cent from individuals, and 50 per cent from foundations and other sources.

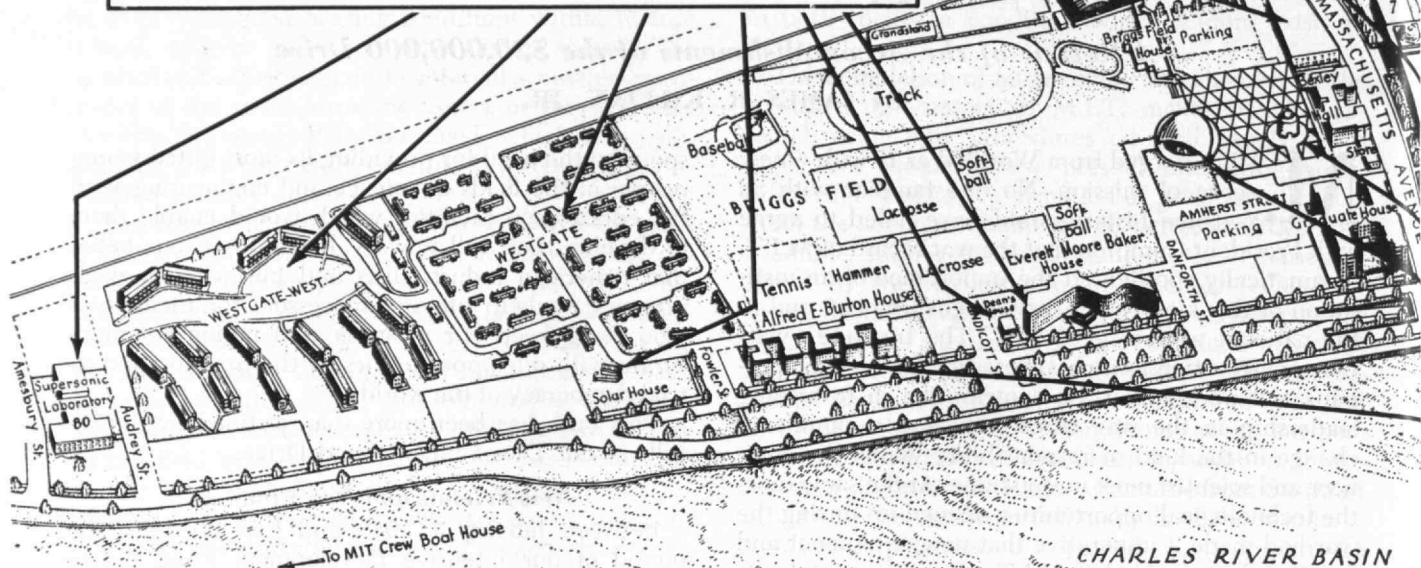
This is an impressive record. It is even more impressive when it is remembered that this, the intensive phase of the postwar fund-raising program, followed upon the receipt by M.I.T. of some \$7,750,000 in new financial support in the first two and one half years after the end of World War II. Except for the Eastman gifts, this amount is significantly larger than had been received in any comparable period of time theretofore.

Major additions to funds during the years 1945 through 1947, included the following:

Amount	Donor	Purpose
\$2,200,000	Charles Hayden Foundation	Library— Humanities Center
750,000	Alfred P. Sloan, Jr., '95	Gas Turbine Laboratory— Enlarged Automotive Laboratory
	General Electric Company	
	Westinghouse Electric Corporation	
	United Aircraft Corporation	
	Curtiss-Wright Corporation	
500,000	General Machinery Corporation	Senior Dormi- tory
	M.I.T. Alumni Fund	

Important postwar additions to M.I.T. buildings include, in clock-wise order:

Barta Building — being used for research
Hood Building and adjoining Whittemore Building
Gas Turbine Laboratory and Combustion Laboratory
Tech Block
Rockwell Cage — for indoor athletic activities
Everett Moore Baker House — student dormitory
Moore House — residence for Dean of Students
Solar Energy House
Westgate
Westgate West } — residences for married students
Supersonic Laboratory



Major gifts received during the Development Fund Drive conducted by the Committee on Financing Development included:

Amount	Donor	Purpose
\$5,250,000	Alfred P. Sloan Foundation, Inc.	School of Industrial Management
1,500,000	Kresge Foundation	Auditorium—Chapel
1,000,000	John D. Rockefeller, Jr.	Unrestricted Funds*
1,000,000	Campbell Soup Company	John Thompson Dorrance Laboratory of Biology and Food Technology
1,000,000	Alfred P. Sloan Foundation, Inc.	Metals Processing Laboratory

More than \$4,500,000 of the total subscribed by corporations was in the form of major grants, of the order of \$250,000 over a period of five years. Such corporate contributions were made in general support of education and research in the field or fields of a company's interest. Except for something over \$180,000, which went toward the capital cost of a building for a 12-million electron-volt (12 M.E.V.) generator, these grants were used for current operations. Companies

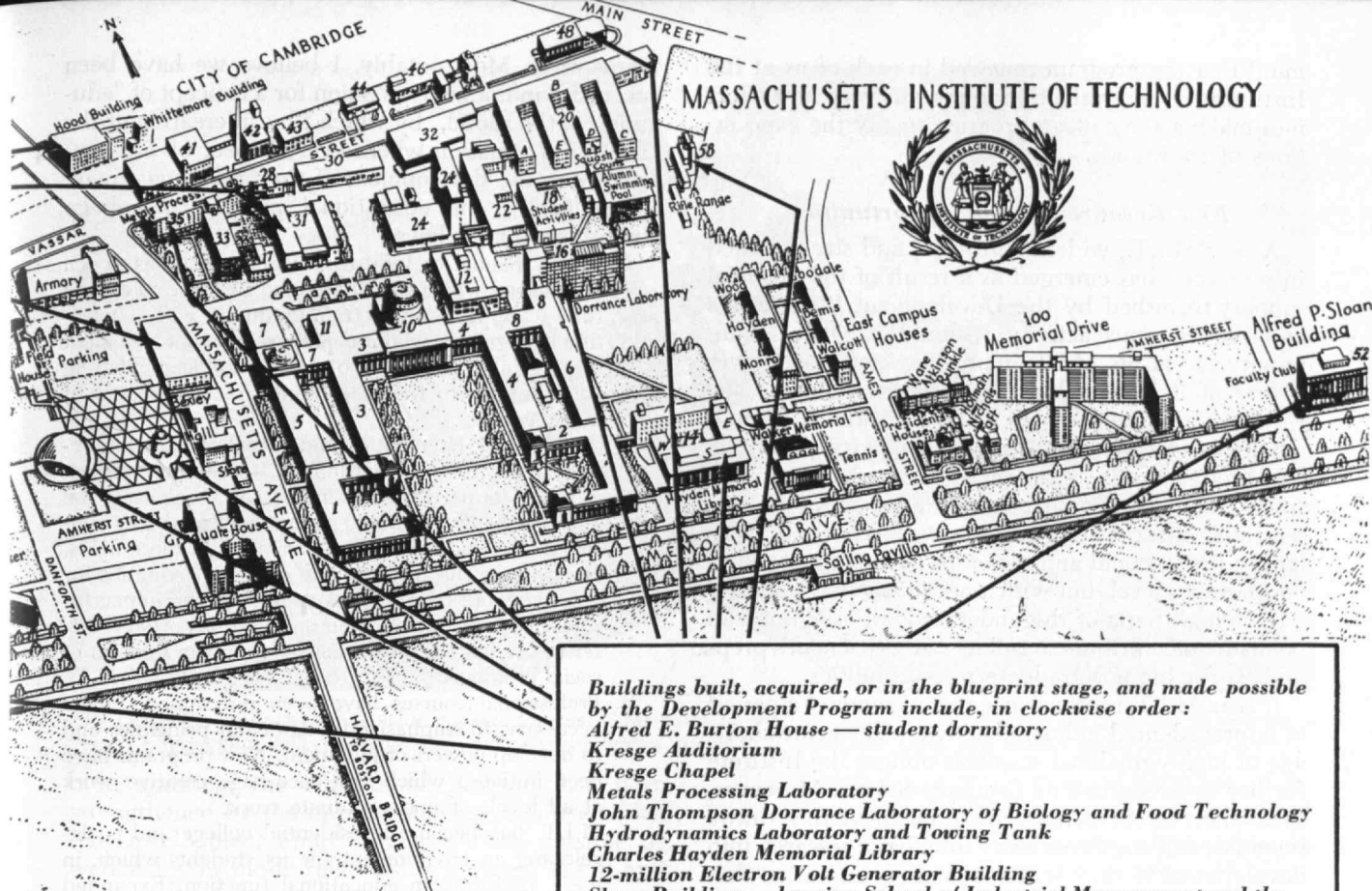
* This gift was to augment the Institute's unrestricted funds so that it might, in the words of Mr. Rockefeller, "continue to expand its strategic service to all interested in the advancement of science for the betterment of mankind, irrespective of national boundaries."

making such substantial grants did so under an arrangement whereby the Institute, through its Industrial Liaison Office, undertakes to keep these firms systematically informed about research and educational activities at M.I.T. which are important to their business.

New Level of Teamwork

A report on what the Development Program has meant to M.I.T. may well begin with a report on the intangibles. More important than any particular accomplishments, either in new buildings or new programs, have been the vigor, enthusiasm, and sense of mission with which all members of the M.I.T. family have tackled the job of helping the Institute to embrace fully its present challenging opportunities. There has been a mobilization and a massing of forces that have given us a wholly new concept of the strength of M.I.T. Moreover, there has been a very real feeling that it is not only as Alumni and staff that we are joined to insure and enlarge the usefulness of M.I.T., but as citizens concerned with strengthening what has proved to be a tremendous national asset.

To the Institute's Alumni this country now owes a debt beyond measure. Under the inspiring and inspired leadership of Alfred P. Sloan, Jr., '95, and Marshall B. Dalton, '15, honorary chairman and chairman, respectively, of the Committee on Financing Development (C.F.D.), Alumni throughout the country have given unsparingly of time and effort as well as money to make the Development Program a success. The 700 Alumni who participated as members



of the Committee on Financing Development will take an honored place in the records of the Institute. These men spearheaded the drives in the local communities and provided the necessary liaison between the Institute and its far-flung family. Particular tribute is due to the Alumni who headed the major committees and the eight regional offices, the members of these committees, and the countless others who became associated with them in helping to make this fund-raising campaign a success. As the fulcrum of the effort, the very able staff in the Development Office at the Institute contributed magnificently. This staff included: Professor William L. Campbell, '15, Executive Director; Ralph T. Jope, '28, Assistant Executive Director (now Director of the permanent Development Program Office), and L. Francis Lybarger, Jr., of Marts and Lundy, Resident Director.

The intensive drive for new funds from without the Institute was matched within the Institute by the intensive drive to bring each part of our program into line with the new postwar goals. The Institute has a proud tradition of co-operation among Administration, Faculty, and students. There is nothing new in reporting the devotion of this splendid group. But during this period, when extraordinary creative activity in respect to the over-all program was called for, there was a new surge of effective teamwork. Moreover, the Development Program served to keep before all of us the common purposes that unite our various activities. As the reports flowed in, of the activity of Alumni and friends in seeking to strengthen our financial support, there was no doubt in the writer's

Committee on Financing Development

Committee Chairmen

Corporation Survey Committee — John R. Macomber, '97
Steering Committee — Marshall B. Dalton, '15

Committee on Alumni Participation H. B. Richmond, '14
Committee on Bequests Phillips Ketchum
Committee on Business Corporations Robert T. Haslam, '11
Paul Ryan, '22

Committee on Foundations Frank B. Jewett, '03 (deceased, 1949)
Richard P. Windisch, '21
Committee on Projects William L. Campbell, '15
Committee on Public Information Thomas D. Brophy, '16
Committee on Resources Horace S. Ford
Committee on Special Gifts Gerard Swope, '95 (honorary)
B. Edwin Hutchinson, '09
Committee on Special Trusts Royal Little

Regional Chairmen

Region I Raymond Stevens, '17
Region II Duncan R. Linsley, '22
Region III Walter J. Beadle, '17
Region IV Paul W. Litchfield, '96
Region V Louis H. G. Bouscaren, '04
Region VI Horace R. Bennett, '16
Region VII Samuel W. Selfridge, '13
H. W. McCurdy, '22
William L. Stewart, Jr., '23
William E. Mitchell, '03
James F. Crist, '24
Region VIII

mind that the program renewed in each of us at the Institute the determination to put our very best effort into making the college program justify the expectations of its friends.

New Resources; New Opportunities

A new M.I.T., widened in scope and strengthened in resources, has emerged as a result of the financial support furnished by the Development Fund Drive and the vigorous activity within the college community. It is an M.I.T. more conscious than ever before of its national and international status. The Institute has a new vision of its educational responsibility as we enter an age in which men with scientific background are increasingly in demand, not only as specialists, but for managerial and policy-making positions. It is devoted, as it always has been, to combining professional and general education at the undergraduate level, but with a new concept of the way in which all parts of the undergraduate program can be made to contribute in full measure to a man's preparation for his postgraduate responsibilities.

It is an M.I.T. responsive to the demands of a period of unprecedented industrial activity. The acute shortage of highly qualified scientists obliges the Institute further to strengthen its Graduate School. Moreover, since the current defense program inevitably draws scientists and engineers away from basic research into development work, it is more than ever important that a great technological institution rededicate itself to its primary research responsibility, that it provide the atmosphere and the incentives for the fundamental explorations that alone can insure our continuing progress in solving human and social problems.

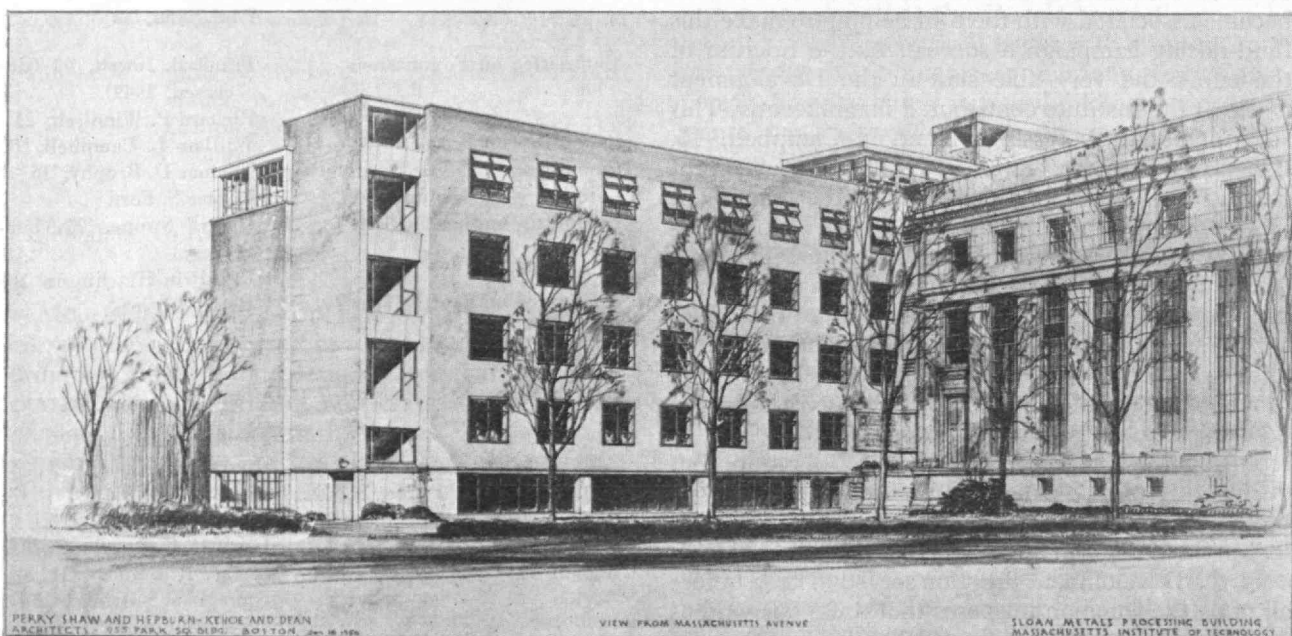
New Educational Program

Approximately two-thirds of the Development Fund has been allotted to endowment and to current operations in education and research. This has made it possible to strengthen our educational program in

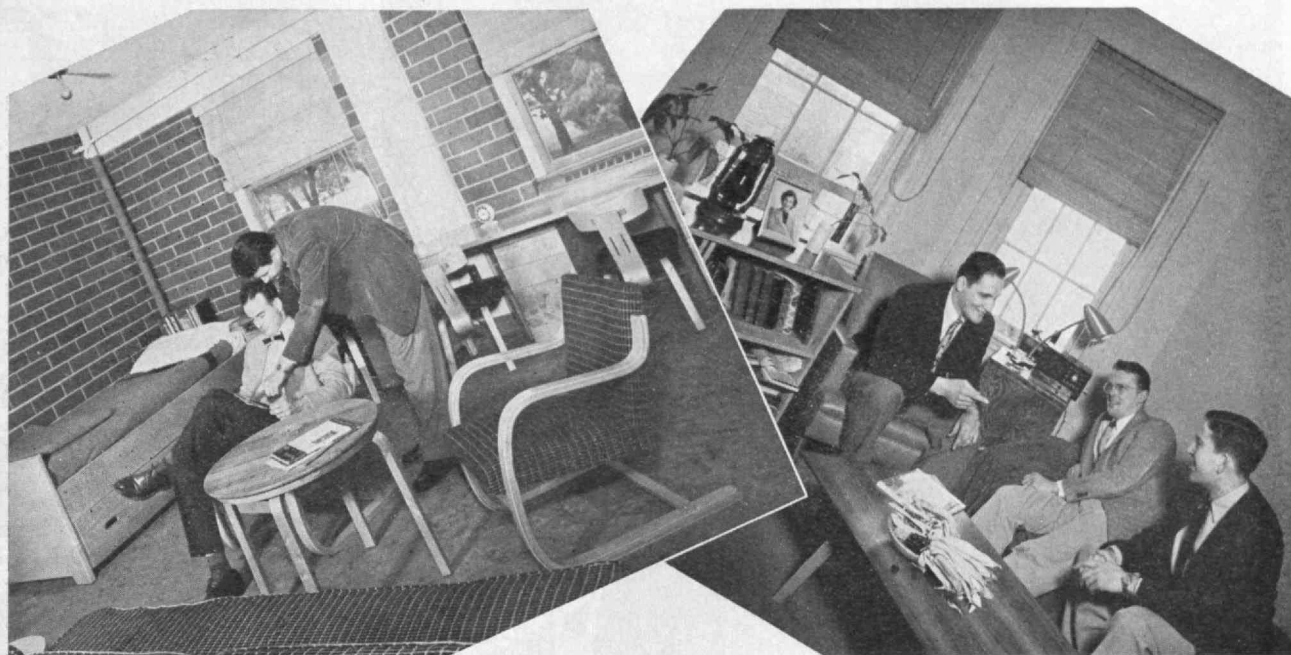
many ways. Most notably, I believe we have been successful in finding expression for a concept of "education in the round," by which I mean creating at the Institute a situation where every aspect of life contributes to the development of the professional man.

Specifically, the educational program has been strengthened as follows:

1. A new School of Industrial Management has been established which will enable the Institute to exploit fully its opportunity to train graduates with a scientific background who are prepared for management responsibility. It will also make possible pioneering contributions to the developing art and science of management.
2. A School of Humanities and Social Studies has replaced the former Division of Humanities. By expanding its participation in the social sciences, the Institute has been able to strengthen greatly the content of the undergraduate curriculum in these fields. In addition, the Institute can offer opportunities for creative work on problems caused by the impact of science on our society, and on questions of how better to use our scientific knowledge in the solution of social problems.
3. Professional courses have been redesigned, where necessary, to emphasize fundamental principles and to develop powers of judgment. New programs have been initiated which will encourage creative work at all levels of undergraduate work.
4. M.I.T. has become a residential college and is developing an environment for its students which, in itself, performs an educational function. Expanded student-government activities have increased the opportunities for students to learn to take responsibility and exercise judgment in handling affairs of common concern.
5. Improved student counseling activities represent a major effort to eliminate unnecessary roadblocks to a student's achievement at college.
6. Through having resident Faculty members in the student houses, through improved Faculty advisory programs, and through the provision of rooms for informal gatherings, better student-faculty relationships have been encouraged.



Already partly occupied, the Metals Processing Laboratory, adjoining the Guggenheim Aeronautical Laboratory, will be dedicated on June 3.



The Development Program has made possible substantial increases in student residences, thus aiding the Institute to become a residential college. Shown here are views of typical rooms in Baker House (left), and Burton House (right).

In addition, the educational program has been strengthened by the improvement in facilities which the Development Fund Drive has made possible, as well as by the closer relationship between M.I.T. and the industrial community.

New Relationship with Industry

One of the happiest results of the Development Program has been the closer relationship which M.I.T. has now established with industry. In the course of the Development Fund campaign, members of the Institute's Administration met and talked with industrialists throughout the country to an extent that, regrettably, is not always possible in the normal course of events. Coming as it did at a time of growing management concern with the work and needs of the technological schools, the Development Fund Drive provided an opportunity for an exchange of understanding of each other's needs, which was welcomed by the Institute and industry alike.

The Industrial Liaison Office was established by the Institute in 1948 to centralize all Institute contacts with the companies which give major support to work in fields of their interest, and will serve to keep this relationship a continuing one. Through this office we have developed a systematic way of keeping in touch with an important cross section of the industrial community. To the Institute's program, and to industry generally, such liaison yields benefits that extend beyond the immediate and primary purpose of serving particular concerns.

The success of the industrial liaison program is attested by the fact that it is rapidly expanding. It promises to become ever more important as, increasingly, large industrial concerns discover the need for keeping in touch with scientific progress in all fields. At the same time, the program provides industry with an appropriate channel for giving support to the basic research which will help insure that solutions will be found for new problems as they arise.

The Development Fund Drive owes much of its success to corporate gifts and to industrial support of the Institute's research and educational programs. In a major way, this type of support has helped M.I.T. to keep abreast of the requirements of a period of intense industrial activity and scientific advance. There is no doubt but that M.I.T.'s continued ability to meet the needs of our day will depend in large part on the interest and support of the business and industrial community.

New Buildings and Facilities

A technological institution must keep abreast of scientific advance in its facilities and equipment, as well as caring for the normal continuing building requirements of any first-rate educational institution. Even before the war the need for new facilities was urgent. By the close of the war the need was imperative.

- The steady progress of science and engineering posed demands for extremely complex and expensive research and teaching tools, and had made obsolete much prewar equipment.

- M.I.T. lacked the dormitories and other student buildings so important to a rounded educational environment.

- Its library facilities were outgrown. It had no auditorium. It had no chapel.

- There were appropriate new programs for M.I.T. to develop if facilities and men could be obtained; for example, metals processing, industrial management, nuclear engineering, the life sciences.

- Enrollment would be higher than prewar, and this posed its own requirements for additional space. M.I.T. had to assume its share in meeting the national shortage of scientists and engineers.

- Even before Korea it was apparent that M.I.T. had an obligation to extend its services to government and to industry.



English and History reading room in the new Charles Hayden Memorial Library provides pleasant surroundings for study.

First steps to bring our plant up to date were taken almost as the Japanese surrender was signed. A major purpose of the Development Fund Drive was to carry forward the Institute's postwar building program. More than one-third of the Development Fund was allotted for building purposes, either through designation by the donor or through allocation of undesignated funds for this purpose by the Executive Committee of the Institute.

The John Thompson Dorrance Laboratory of Biology and Food Technology is now under construction. Named in honor of a distinguished alumnus of the Class of 1895, who was also founder and first presi-

dent of the Campbell Soup Company, this laboratory was made possible by the \$1,000,000 gift of this company, and by an additional allocation of \$1,500,000 from the Development Fund. Costs before completion of this exceptionally fine new building are expected to exceed \$3,000,000. The laboratory will have seven floors, a basement, and penthouses, and will provide, in all, about 100,000 square feet of gross area. It is planned that the Department of Food Technology will occupy the lower floors and the Department of Biology the upper ones.

The purchase of Lever House, which occupied land adjoining the Institute's grounds, has furnished M.I.T.

On Memorial Drive, the Sloan Building marks the eastern terminus of Technology buildings. The Sloan Building will house the School of Industrial Management and the Faculty Club.



with a splendid building for its new School of Industrial Management. In addition, the sixth floor and penthouse will be used for the long-awaited Faculty Club. Now renamed the Sloan Building, it blends architecturally with other Institute buildings and is admirably adaptable to educational use.

The capital cost of the Sloan Building, \$2,504,000, was substantially covered by using, for this purpose, almost one half of the Alfred P. Sloan Foundation gift for the School of Industrial Management.

An additional \$100,000 from the Development Program funds will help cover the costs of remodeling the floors to be used for the new quarters of the Faculty Club in the Sloan Building.

The Metals Processing Laboratory, which is expected to be ready for use by early summer, will permit M.I.T. to consolidate its educational activities involving both metallurgy and mechanical engineering. At the Institute we have been developing a program in which metallurgical science and the mechanics of materials have been applied to the basic processes of machining, finishing, casting, forging, welding, and related techniques. Traditionally there has been no integrated treatment of metals processing in educational institutions. The new Metals Processing Laboratory, made possible by a gift of \$1,000,000 from the Alfred P. Sloan Foundation, will provide space and facilities commensurate with the importance of the work done in this field.

The Kresge Foundation grant of \$1,500,000 to the Development Program has made it possible for the Institute to move ahead with plans for an auditorium and chapel, and \$1,250,000 has already been allocated for building purposes. Eero Saarinen, who has been associated with the design of such beautiful and functional buildings as the Berkshire Music Center (Tanglewood) and the Art Center and Museum of Des Moines, Iowa, has completed plans for an auditorium which express the fresh and creative ideas which have become synonymous with the Institute itself. The auditorium will seat 1,200 and has a stage which will accommodate the largest Institute choral groups, as well as the symphony orchestra. The basement is so planned that it can be developed as a small theater and auditorium to meet the special requirements of our drama groups.

It is also planned to build, adjacent to the auditorium and in a complementary relationship to it, a small nondenominational chapel which will seat 125 persons. The Dean of Students is developing plans for the use of the auditorium and chapel which will insure their full contribution to the rounded educational program which is being evolved at M.I.T. Construction of the auditorium and chapel will start as soon as the availability of building materials permits.

The Charles Hayden Memorial Library was dedicated in May, 1950, its completion having been aided by \$1,189,824 from the Development Fund. It stands almost as a symbol of the M.I.T. of the Mid-Twentieth Century. It houses our Central Library as well as the School of Humanities and Social Studies, an open-shelf library and reading room on English and History, a music room and library, a map room, an art gallery, and a consolidated science library (now replacing the Dewey Library which is being moved to the Sloan Building). A spacious lounge on one of the upper floors has provided an appropriate place for visitors to lecture informally in an atmosphere conducive to discussion. The music library provides recorded concerts daily, and the music rooms are always crowded — the most eloquent possible testimony that students and staff appreciate the enrichment of campus life which the library has made possible.

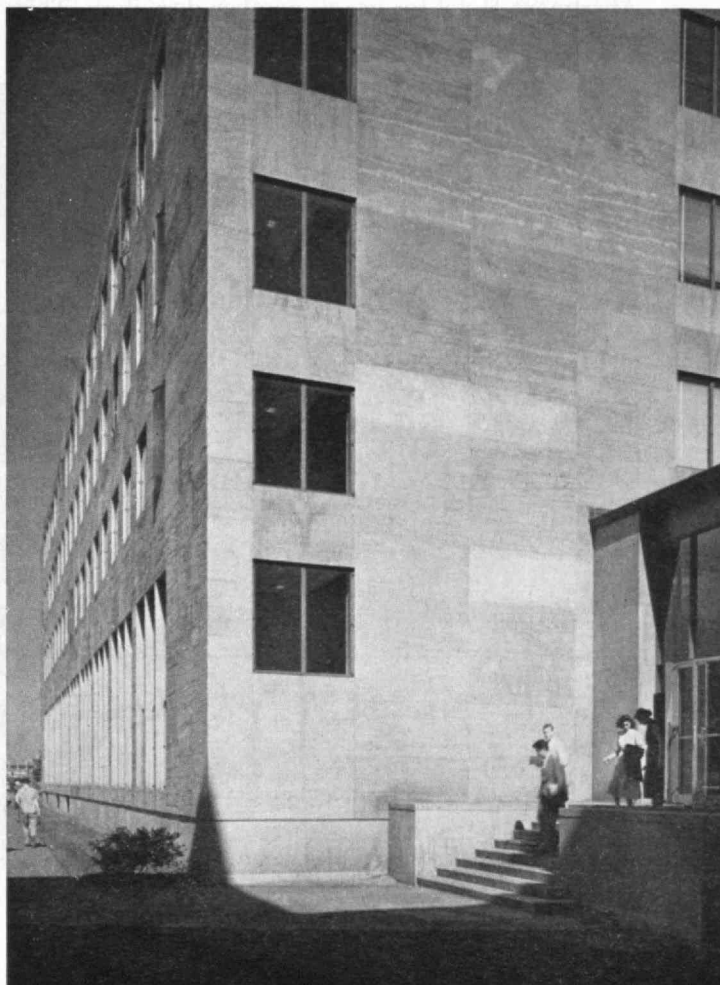
Another building completed during the Development Fund campaign, and to which some of the

Development Fund was allotted, is the Hydrodynamics Laboratory and Towing Tank. This new laboratory, which was built at a cost of \$635,000, has provided exceptionally fine instructional and research facilities for fluid mechanics. It has provided — for the first time on the East Coast — an adequate hydraulics laboratory in this field, of interest to both industry and government. It gives the Institute an adequate towing tank.

The Development Fund contributed, too, to the building of the 12,000,000 electron volt electrostatic generator, which will enable M.I.T. to carry forward its pioneering work in the development of electrostatic direct-current generators built on the Van de Graaff principle. This facility, designed primarily for fundamental studies of the nucleus, will allow further explorations of the use of cathode rays for sterilization. The high-voltage laboratory works closely with the Department of Food Technology in studies of the commercial possibilities of the electron sterilization of foods. In association with medical personnel in the community, it has made dramatic contributions to medical and surgical science. The new generator will make possible further advances. Built at a cost of \$278,255, this splendid research facility obtained more than \$180,000 from the Development Fund towards its completion.

The small portion of the Development Fund which was allocated to the dormitory program fails to indicate the extent to which the Development Fund Drive contributed to the postwar transformation of M.I.T.

The corridor, extreme right, connects the Charles Hayden Memorial Library with the main group of academic buildings at M.I.T.





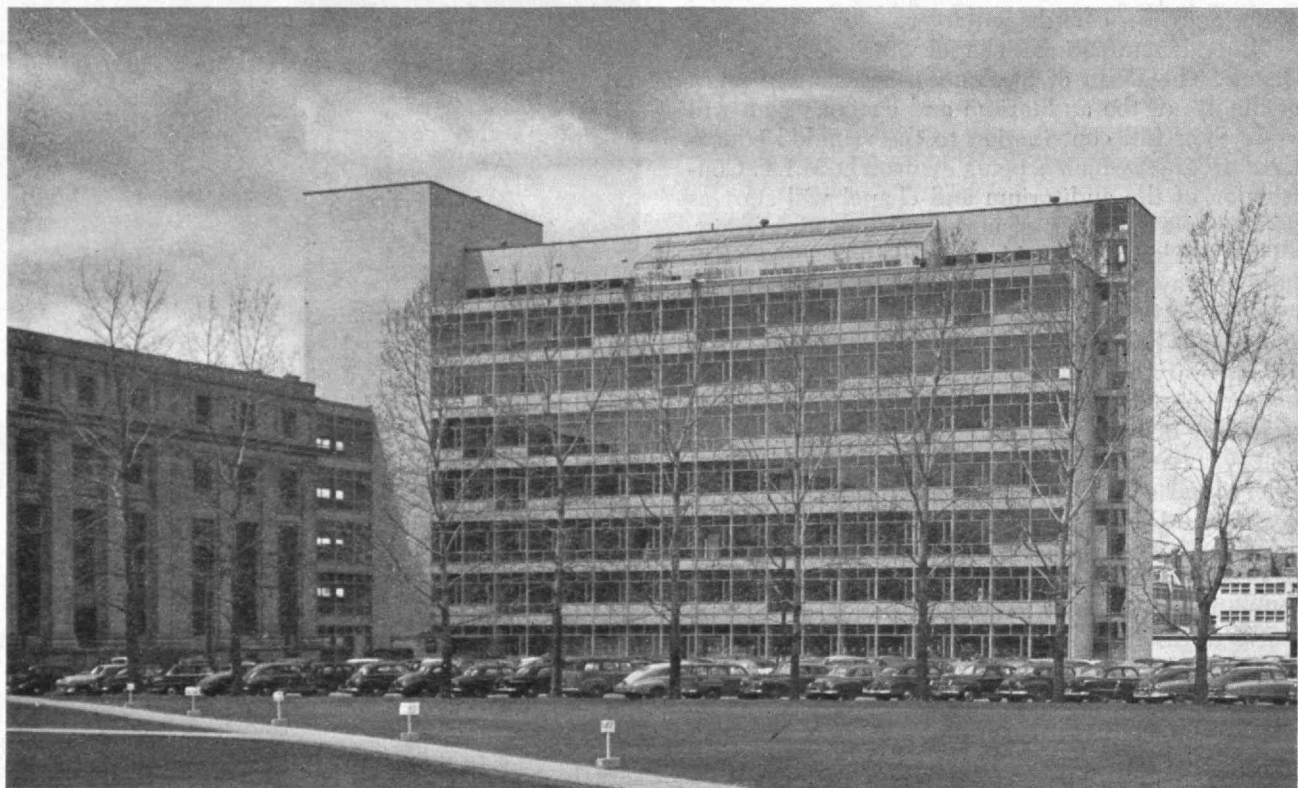
This modern building, of unusual shape, houses the 12 M.E.V. Van de Graaff generator used in studies for nuclear research.

into a residential college. Without the assurance that a major campaign for funds would be successful, the Administration would not have felt free to invest such a large portion of Institute funds in student housing, urgent as it felt the need to be. However, with the Development Fund campaign in progress, it became possible after the completion of the senior dormitory (Baker House) in 1949, to purchase the Riverside Apartment Hotel for use as another dormitory. This new housing facility has been named Burton House.

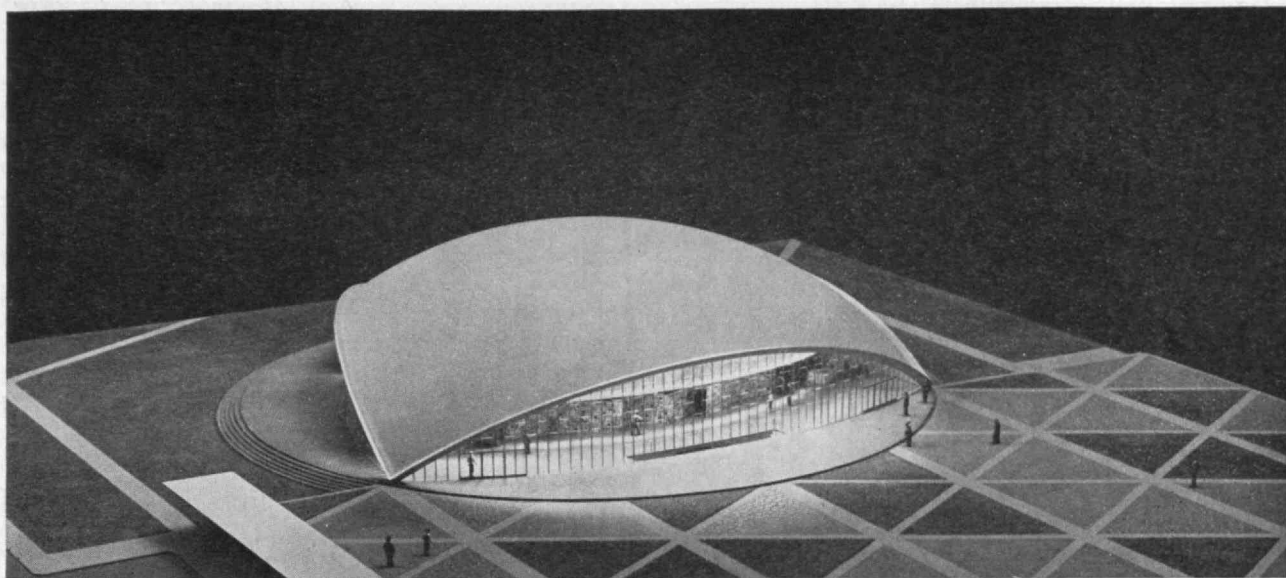
These two additions gave us nearly 1,000 new accommodations for students and more than doubled our permanent dormitory facilities in the course of one year. If we include Westgate and Westgate West (the units for married students provided since World War II), and the fraternity houses, we have accommodations now for approximately two-thirds of our student body. Few achievements since the war have been so welcome. The Institute has also received by bequest a residence for the Dean of Students. The former home of the late Professor Forris Jewett Moore at 372 Memorial Drive, next door to Baker House, became the property of the Institute on the death of Professor Moore's widow in 1950, and has been occupied by E. Francis Bowditch, Dean of Students, and Mrs. Bowditch since their arrival at M.I.T.

Between the end of World War II and June, 1951, the Institute had constructed (or started the construction of) more than 1,000,000 square feet of space. This represents an increase of approximately 50 per cent in the size of our plant. In addition to the facilities provided by the Development Fund, a Supersonic Wind Tunnel, a Gas Turbine Laboratory, and a Combustion Laboratory have been built since the war's end. Rockwell Cage, built in 1948, has provided the Institute for the first time with an adequate under-cover area for sports such as baseball and lacrosse. In addition, M.I.T. has expanded its facilities for research through purchase of the Barta Building and the Whittemore Building, just north of the campus, both on Massachusetts Avenue. Both of these properties were bought for investment purposes, but are now used for sponsored research.

Still other pieces of property have been acquired by the Institute as investment properties, including the Tech Block on Massachusetts Avenue across from



Skyscraper of the M.I.T. buildings is the Dorrance Laboratory which will be ready for occupancy in the fall of 1952.



Among the buildings made possible by the success of the Development Program is the projected Kresge Auditorium. Shown here is the conception of Eero Saarinen, architect for the auditorium.

our main buildings. We are presently exploring with city and state authorities the possibilities for a Massachusetts Avenue underpass between the East and West campuses, so that in the not too distant future we may hope to have a broad plaza between the Rogers Building on the East Campus and the new auditorium on the West Campus.

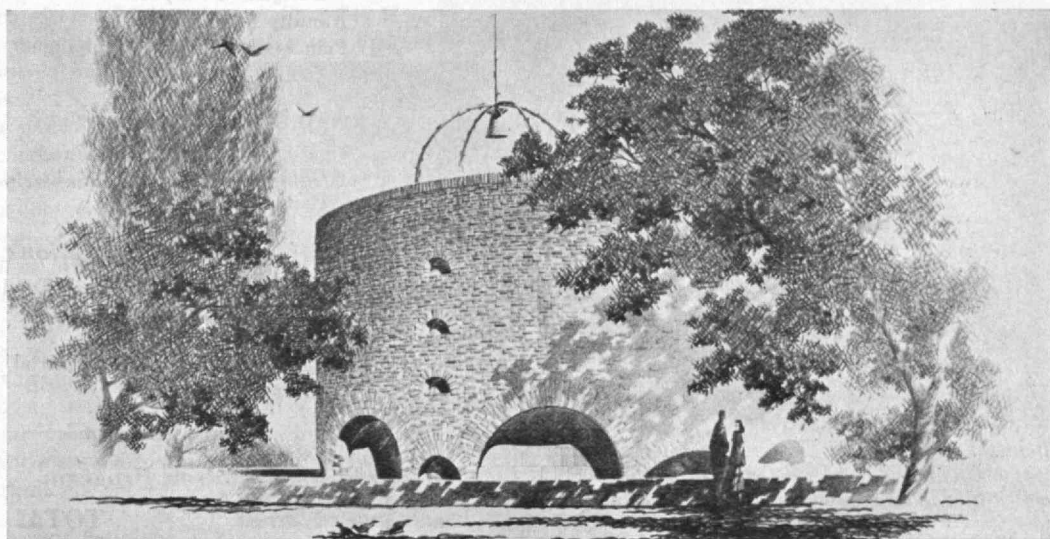
Capital Funds

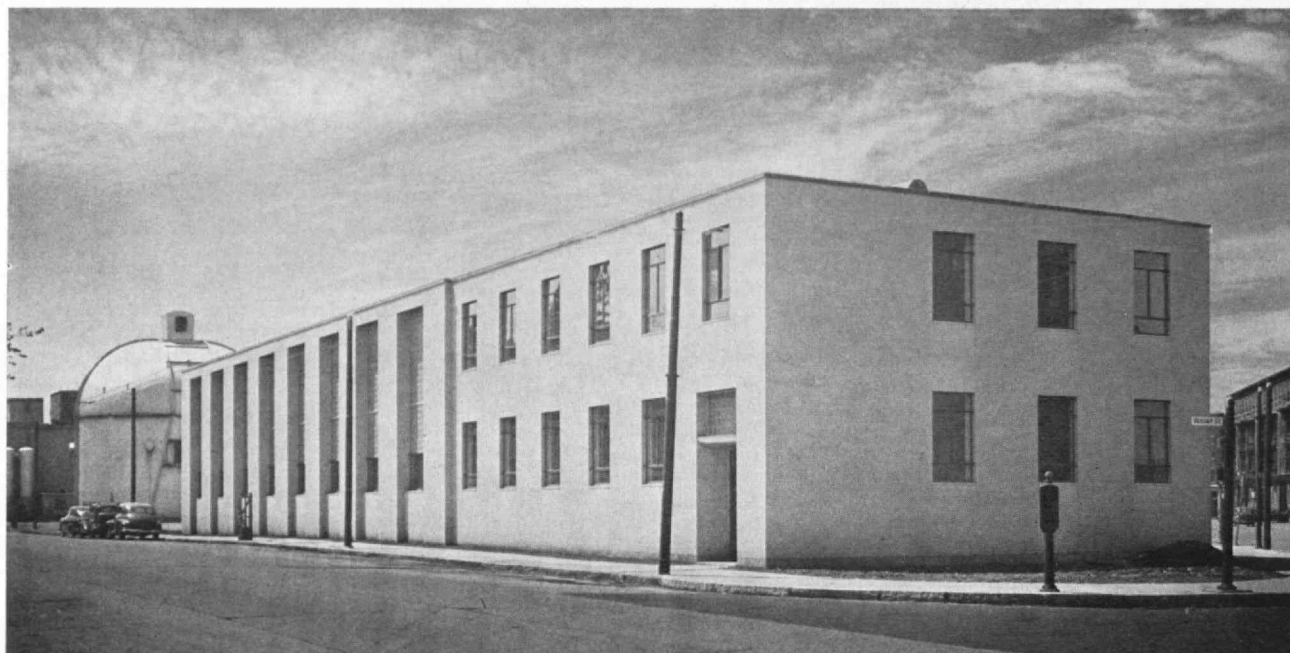
When the Development Fund Drive was planned, it was hoped that this campaign would enable us to increase our capital funds by \$10,000,000, of which \$8,000,000 would be set aside for endowment. This amount was considered as a minimum requirement to finance badly needed salary increases and scholarships, to strengthen our program in the humanities and to increase the Institute's endowment income which had dropped to a dangerously low level in relation to the magnitude of its operations. As it turned out, we were able to allot only \$4,464,547 of the Development Fund Drive receipts to permanent cap-

ital funds. Thus, only half of our goal in this important area was obtained. Over \$2,000,000 of the increase has been allocated to endowment for designated purposes. This includes \$500,000 set aside for the Faculty salary reserve and approximately \$700,000 for scholarships.

Since the need for new endowment and unrestricted funds is a continuing one, the failure of the Development Fund Drive to carry us over the top on this objective is more serious than it otherwise might be. Moreover, just as rising costs have affected the progress of the building program, so too, have they made it necessary for the Institute to lift its sights in respect to the endowment it must continue to seek. One of the benefits we expected to derive from the intensive Development Fund campaign was an increase in the annual gifts received by the Institute once the drive was completed. This hope has been realized this year, with total gifts probably exceeding \$5,000,000, exclusive of maturing pledges to the Development Fund. As a result, this year we will add more than \$2,000,000 to our endowment.

Architect's drawing of the exterior of the Kresge Chapel which will be built as soon as construction materials become available for this purpose.





The Hydrodynamics Laboratory and Towing Tank at M.I.T. was dedicated last June. The buildings and equipment were described in the June, 1951, issue of *The Review*.

Allocation of Funds

The statement of objectives of the \$20,000,000 drive did not include any item for current operations. However, at the start of the drive the Executive Committee of the Corporation asked that practically all contributions of any kind made to the Institute during the campaign should be counted toward the total. The total amount reported, therefore, includes gifts and grants given during the period for current operations, as well as those given specifically for the objectives of the campaign.

The following table summarizes the allocation of funds subscribed to the Development Program during

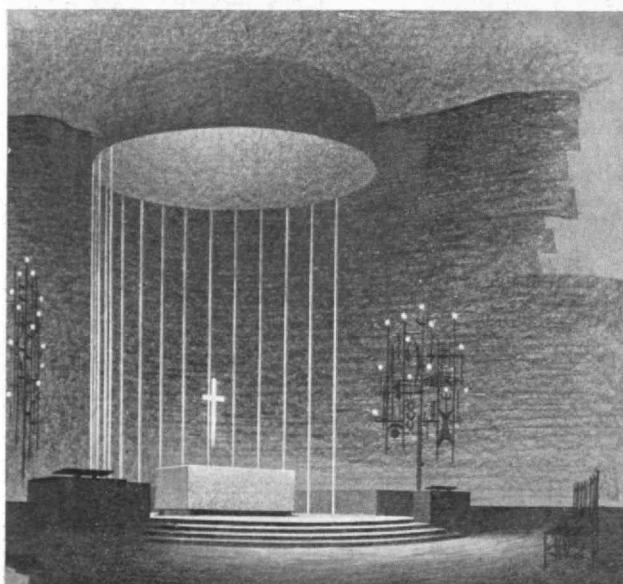
the Development Fund Drive, January 1, 1948, to June 30, 1951:

DEVELOPMENT PROGRAM

Allocation of Funds Subscribed

January 1, 1948 — June 30, 1951

Buildings and Facilities	\$ 9,000,637
Sloan Building and Faculty Club	\$2,600,000
Dorrance Laboratory of Biology and Food Technology	2,500,000
Kresge Auditorium and Chapel	1,250,000
Hayden Library	1,189,824
Sloan Metals Processing Laboratory	1,021,317
12-M.E.V. Generator Building	188,038
Dormitories	185,212
Hydrodynamics Laboratory	66,246
Permanent Capital Funds	4,464,547
Endowment Funds	
General Purposes	1,873,604
Designated Purposes	2,070,943
Annuity Fund	20,000
Principal of Funds supplying income to Institute	500,000
Unrestricted Funds	1,874,609
Unallocated Unrestricted Funds	774,213
Unallocated Unrestricted Subscriptions	1,100,396
Funds for Current Operations	5,811,777
Operating Funds — Research Funds, Fellowships, and Development Program Expenses	2,610,596
Operations of School of Industrial Management (Alfred P. Sloan Foundation Grant)	2,750,000
Scholarship and Prize Funds	451,181
Industrial Liaison Program	4,516,962
TOTAL	\$25,668,532



Architect's rendition of the interior of the nondenominational Kresge Chapel planned for the future. This cultural addition to Institute buildings will rise on land near Bexley Hall, according to present plans.

Achievements of the Campaign

The foregoing table shows that while the intensive drive of the Development Program more than achieved its financial goal of \$20,000,000, some of our major objectives, as announced at the beginning of the campaign, remain unfulfilled. There are several reasons for this. In the first place, we included contributions and support for current operations in the total, as mentioned above. Moreover, some gifts were given for specific projects not originally included in Development Program plans. Most notably this is true of the \$5,250,000 grant of the Alfred P. Sloan Foundation, Inc., for the establishment of a School of Industrial Management. Finally, rising material and labor costs within the past several years have forced up the costs of the new buildings despite every effort on our part to modify plans in the light of higher prices. The Biology and Food Technology Laboratory, planned originally as a \$2,000,000 building, will finally cost more than \$3,000,000. It was expected that the library and humanities center would cost \$3,200,000; its final cost was close to \$4,000,000.

Two buildings originally projected have, therefore, still to be provided. To bring together our widely scattered and inadequate facilities in electronics and nuclear science, a laboratory for the physical sciences is a first priority building need in the days ahead.

Another one of the Development Program objectives which has not been obtained is a gymnasium. This, too, is still urgently needed.

More serious than the inability to finance the complete building program specified in the objectives of the intensive drive, is our failure to obtain the desired increase in capital funds. In the long-range financial operations of the Institute, such funds are by far the most important.

This having been said, it remains a fact that the Development Fund campaign has been a magnificent success. It has given us a new measure of our strength. It has given us a measure of the size of the responsibility which we must assume if this great technological institution is to continue to serve the nation and the world to the extent of its full potential.

During the Development Fund campaign, we held the great Mid-Century Convocation on the "Social Implications of Scientific Progress," which brought Winston Churchill and a galaxy of other distinguished visitors to our campus. This occasion furnished an impressive reminder of the Institute's role in an age in which science and its applications are so powerfully felt, and in a world in which extensive undeveloped regions need the help of science and technology if they are to afford their populations a tolerable and dignified existence.



When the Charles Hayden Memorial Library was dedicated in May, 1950, a new era in the advancement of nontechnical studies was ushered in at the Institute and engendered immediate favor with "the Engineers." The Exhibition Gallery (above) now provides opportunity to display on Technology property important works of art. The gallery is in constant use throughout the year, and draws visitors from the populace of Metropolitan Boston, as well as from the Institute's student body of approximately 5,000. The Music Lounge (right) provides programs of classical recordings through the school day, and is a popular congregating place for music-loving students. In addition to the lounge, a number of smaller listening rooms are available with record players for individual study of musical scores.



CONTRIBUTIONS TO M.I.T. DEVELOPMENT PROGRAM BY CLASSES

Totals as of June 29, 1951

Class Year	No. of Subscriptions	Total Amount	Class Year	No. of Subscriptions	Total Amount
1882	1	\$ 5.00	1919	122	\$ 66,881.50
1884	3	135.00	1920	181	87,275.54
1885	2	30.00	1921	241	98,554.00
1886	3	3,105.00	1922	352	164,239.50
1887	3	1,011.00	1923	309	243,295.00
1888	8	31,753.50	1924	244	89,339.99
1889	5	3,350.00	1925	217	64,997.00*
1890	16	18,750.00	1926	268	87,967.80*
1891	14	2,263.00	1927	256	84,900.00
1892	10	3,012.00	1928	259	76,719.00
1893	24	6,555.00	1929	222	45,835.50
1894	15	13,145.00	1930	210	42,961.00
1895	16	53,047.00	1931	228	37,062.00
1896	39	42,809.00	1932	254	33,588.00
1897	22	404,543.57	1933	256	149,204.41
1898	30	8,090.00	1934	282	50,531.00
1899	33	61,790.00	1935	242	39,968.00
1900	39	21,235.00	1936	232	28,575.00
1901	59	673,276.25	1937	217	27,106.50
1902	45	141,503.13	1938	221	23,303.00
1903	59	32,926.00	1939	285	45,526.00
1904	51	20,720.00	1940	296	31,640.00
1905	68	78,935.00	1941	257	26,737.50
1906	87	58,185.00	1942	267	24,088.50
1907	72	110,778.75	1943	268	19,554.90
1908	81	34,278.00	1944	255	23,476.63
1909	80	74,393.00	1945	136	8,495.00
1910	95	30,503.00	1946	178	9,973.50
1911	113	62,671.50	1947	277	15,841.66
1912	111	71,534.00	1948	376	21,246.50*
1913	139	86,493.75	1949	226	12,704.25
1914	113	49,865.00	1950	81	1,695.50
1915	155	139,744.00	1951	2	130.00
1916	149	84,483.00			
1917	187	135,450.00			
1918	156	47,319.75*			
			TOTALS	9,820	\$4,391,101.88

* Gifts from corporations counted in class totals by request.

The Convocation was held on March 31, and April 1, 1949. In June, 1950, the Communists moved against the Republic of Korea. This invasion alerted the free world to the danger of a major aggressive move by the Soviet Government. It made necessary a tremendously increased program of national defense. In the ensuing months M.I.T. has been called upon to undertake a large program of defense work. It can be a source of deep satisfaction to all who have contributed to the fund-raising drive, to know that because of the financial support thus obtained, M.I.T. has been ready for the emergency demands as it would not have been if the campaign for funds had not been such a success.

The names of all who have contributed \$300 and over to the Development Program will appear on a bronze plaque in an appropriate place of honor at the Institute, as soon as the materials shortage makes it possible to obtain the bronze. A Book of Remembrance containing the full record of all contributors

was presented to the Alumni Association by the chairman of the C.F.D. on Alumni Day, 1951, and will be preserved among the archives of the Institute.

In any list of names, those of Marshall B. Dalton, '15, and Alfred P. Sloan, Jr., '95, will shine with a special light. Mr. Dalton brilliantly directed and led the campaign, giving a substantial portion of his time to it. Few institutions have ever commanded such devotion and effective service as he has given M.I.T. Mr. Sloan's munificence, enthusiasm and vision of the opportunity which M.I.T. must grasp, served to increase the value of all other contributions by increasing so significantly the size of our total achievement. To Mr. Sloan, to Mr. Dalton, to all who worked as members of the Committee on Financing Development, to all who made gifts and contributions, and to the staff and employees of the Institute whose contribution has been too all-pervasive to be recorded, M.I.T. and the nation it serves, can give grateful thanks.

Of Yankee Granite—II

*Between 1825 and 1842, When the Bunker Hill Monument
Was under Construction, Great Strides Were Made
in the American Construction Industry*

By E. H. CAMERON

IN the May, 1952, issue of *The Review*, Part I of this article described the promotion and design of the monument, and the quarrying of the stone. Part II, which follows, describes the Granite Railway and the erection problems of the monument.

The Granite Railway

On October 7, 1826, the first railroad in America started operation. This was the horse-operated Granite Railway, built to transport the stones for the Bunker Hill Monument from the quarry in Quincy down to the Neponset River, a distance of nearly three miles. The track and cars of the railroad had been designed and built by a young engineer of 28, Gridley Bryant, whose Granite Railway project started him on a long career of achievement in the invention of equipment that played a major part in the rapid and successful development of the American railroad system.

Ample precedent for the Granite Railway existed in England, where, since the reign of Charles II, wooden tracks, sometimes armored with iron plates, had been used as runways for coal cars from the pits to the nearest waterway. Within five years of the start of the Granite Railway, similar systems are recorded in the states of Pennsylvania, South Carolina, New York, and Maryland. At first, the motive power for these lines was supplied by gravity, stationary engines, or horses, but soon tiny steam locomotives were tried. Thus, in the year 1829, Peter Cooper built the famous *Tom Thumb*, a successful locomotive which used rifle barrels for flues. In the same year the *Stourbridge Lion*, "the first locomotive that ever turned a driving wheel on a railroad on the Western Continent,"⁶ was brought by sailing vessel from England and started operation in Pennsylvania. The American steam railroad system was thus well under way by the time the lower courses of the monument were being raised.

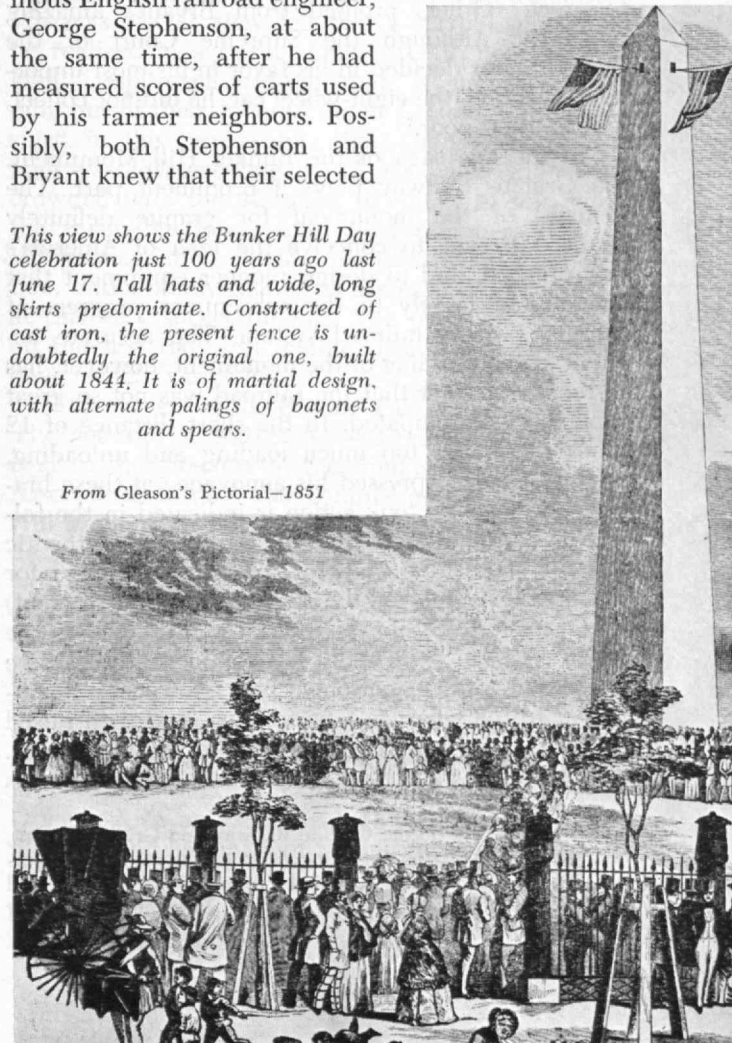
Bryant later described his railroad as having stone sleepers laid across the track, 8 feet apart. Upon these, were placed wooden rails, 6 inches thick and 12 inches high (replaced by stone within a few years). Spiked on top of these were iron plates, 3 inches wide by ¾ inch thick. However, at road crossings, stone rails were used, with 4-inch by ½-inch iron plates bolted on top. This "permanent"

construction was also used on the double-track, inclined plane at the quarry. (Well-preserved vestiges of this "permanent" construction are visible today at the rise to the Bunker Hill quarry.) Here, an endless chain allowed the loaded, descending cars to pull up the empty ascending ones.

The standard gauge of American railroads is now 4 feet, 8½ inches, measured between railheads, a standard adopted after many years of confusion before the present gauge dimension was adopted. Although Bryant described his track gauge as 5 feet, this dimension was measured between the "bearing points" of the wheels on the tracks. If the bearing points are assumed to be the center of the treads of the wheels, his gauge is found to match closely the present standard gauge. This track gauge agrees with that adopted by the famous English railroad engineer, George Stephenson, at about the same time, after he had measured scores of carts used by his farmer neighbors. Possibly, both Stephenson and Bryant knew that their selected

This view shows the Bunker Hill Day celebration just 100 years ago last June 17. Tall hats and wide, long skirts predominate. Constructed of cast iron, the present fence is undoubtedly the original one, built about 1844. It is of martial design, with alternate palings of bayonets and spears.

From Gleason's Pictorial—1851



⁶Annual Report of the Smithsonian Institution, 1889.

guage had a very early beginning; for some historians suggest that the English carts were originally made to fit the ruts cut in the roads of Britain by the Roman chariots, many centuries earlier, during the Roman occupation of Britain.

On the day when the railroad started operation, 16 tons of granite from the Bunker Hill Quarry, and loaded on three "wagons," were easily pulled by one horse, once started. Bryant's first car had flanged wheels, 6½ feet in diameter, from the axles of which a platform was hung to carry the granite. This platform was lowered to receive the load and then raised by an ingenious gearing device.

Naturally, Bryant based the design of his early railroad cars upon the construction of the horse-drawn wagons of his day. Like the wagons, his cars had to be flexible if they were to keep on the track when passing over the two curves of the otherwise straight Granite Railway. In his description of another of his cars appear the road wagon terms — bolsters, truck, and center kingpin, to allow a swiveling motion. Rigidly bolted to cross timbers beneath the truck were two iron axletrees, on which revolved cast-iron wheels. (Some time would elapse in railroad progress before the wheels would be fixed to, and revolve with, the axles in journals.)

In early American railroad development Bryant is credited with the invention of the eight-wheel car, the turntable, switch, turnout, and many other improvements. In 1823, he had invented and used in the building of the United States Bank at Boston, his portable derrick, "used in every city and village in the country wherever there was a stone building to erect." Others profited from Bryant's amazing ingenuity. Although the Supreme Court of the United States decided in his favor in his most important invention, the eight-wheel car, he did not collect, and he died poor.⁷

In the fine saga of the Bunker Hill Monument, the Granite Railway plays a prominent part. The demand of the monument for granite definitely inspired Bryant to conceive the idea of America's first railroad, and to design pioneer equipment that contributed hugely to the subsequent progress of America's great railroad system. The accurate account of the building of the monument, however, has to record the fact that the railroad was not so great a benefit as anticipated. In the short distance of 12 miles there was too much loading and unloading. Willard freely expressed his annoyance at these hindrances. That he took action is indicated in the following quotation from an apparently authentic source: "The stone used for the foundation and for the first forty feet of the structure (the monument) was transported from the quarry on a railroad to the wharf in Quincy (actually located in Milton) where it was put into flat-bottomed boats, towed by steam-power to the wharf in Charlestown, and then raised to the Hill by teams moving upon an inclined plane. The repeated transfer of the stones, necessary in this

mode of conveyance, being attended with delay, liability to accident, and a defacing of the blocks, was abandoned after the fortieth foot was laid, and the materials were transported by teams directly from the quarry to the hill."⁸ This account fails to tell how the teams got up and down the steep hill at the quarry: the 84-foot rise at an angle of 15 degrees. Clever Bryant must have used his endless chain to drag the empty teams up, and to brake the loaded ones down.

Beacon for Mariners

In the noisy grogshops on the streets leading to the Boston waterfront, in the sail lofts on what is now Commercial Street, and at the tall desks of the counting rooms of State Street, those who got their living from the sea eagerly discussed the progress of the monument in Charlestown. It was to be their beacon, and when the many frigates, packets, sloops, and schooners had safely passed the danger spots of the lower harbor, the monument would welcome them to the busy inner port of Boston, then much livelier than it is today. But progress proved to be slow. Naturally the stones broken from the Quincy ledges and boulders were not always of the dimensions planned by Willard for the lower courses; many were of sizes needed for the upper courses. Economical Willard dressed the stones as they came out; setting aside those which could not be erected for some time; and the piles of such stones grew larger at Quincy and on the ground about the monument, while the monument itself rose at a snail's pace. A more spectacular progress was needed for a project that was started on a shoestring, and depended on more and still more public contributions. The building fund dwindled to such a low sum that in February, 1829, work had to be suspended for lack of funds to pay the wages of quarrymen, stonecutters, derrickmen, blacksmiths, and teamsters, and the cost of the good hay for the hard-working horses and oxen of the project. But 14 courses had been laid — to a height of 37 feet, 4 inches. The sailors were disappointed, and a poetess said:

But where's the pile they said would rise,
Throwing its shadows o'er the wave, —
Lifting its forehead to the skies —
A Beacon far o'er land and sea,
Signal and Seal of Liberty.

A lottery to secure more building funds was next proposed. It was not unusual to allow lotteries in this period — churches, turnpikes, bridges, and even Harvard College — had received such grants. Public sentiment in Massachusetts, however, was beginning to consider lotteries a vicious practice and the directors of the Bunker Hill Monument Association voted against one.

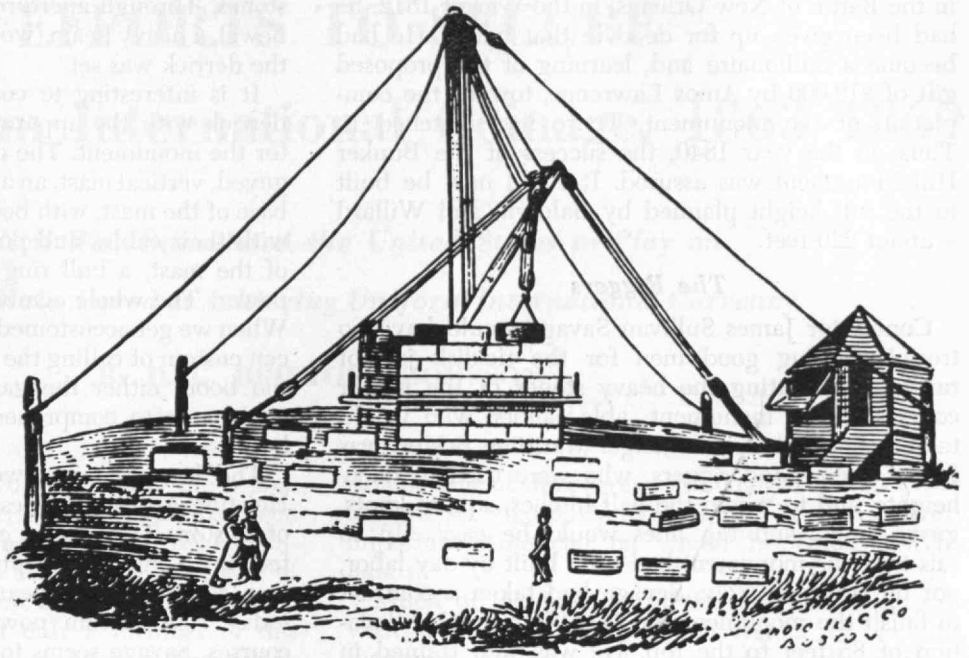
At this time, Amos Lawrence was a member of the building committee — a wealthy philanthropist of Boston, whose religion seemed to be fixed on two ideals, one of which was his charities. Unlike that of a few good ministers of the time, who had preached against giving funds for the monument

⁸George E. Ellis, *History of the Battle of Bunker's (Breed's) Hill* (Boston: Lockwood, Brooks and Company, 1875).

⁷For more data on the Granite Railway and Gridley Bryant, see: Charles B. Stuart, *Civil and Military Engineers of America* (New York: D. Van Nostrand Company, Inc., 1871); and *The First Railroad in America* (Boston: Privately printed for Granite Railway Company, 1926).

This crude sketch published in 1830, shows a stone ready to set, but, strangely enough, no workmen are shown, on the staging, to guide it to its final, precise position. Tackles are shown, attached to the end of the boom, to revolve the mast to bring the stone to its desired placing position.

From Bunker Hill Memorial Tablets—1889



because they felt their various charities should come first, Lawrence deemed the completion of the Bunker Hill Monument of first importance. This project became his other obsession. He enlisted the aid of the Massachusetts Charitable Mechanics Association in the campaign for funds. Started in 1795 by Paul Revere, and others, to promote a better understanding between master mechanics and their apprentices, this society had become influential; its membership embraced mechanics, manufacturers, and such honorary members as Ex-President Adams, Daniel Webster, and Edward Everett. Amos Lawrence had picked upon a well-managed organization for assistance; its executives were shrewd financiers and they knew how to get things done. The president of the Massachusetts Charitable Mechanics Association became in perpetuity the first vice-president of the Bunker Hill Monument Association (today he is still so listed). Thereafter, the Mechanics Association took an active part in the promotion and construction of the monument. It made a careful estimate of the cost to complete the monument and, much to Solomon Willard's disgust, raised his allowance for contingencies. Both associations decided to be satisfied when the monument had reached the height of 159 feet, 6 inches — about two-thirds of the height previously determined upon.

Work was resumed on June 17, 1834, and continued until funds again gave out, when the monument was 32 courses high, 85 feet; now imposing enough for the good mariners of busy Boston harbor to take notice of. It was the year 1835, and the country was headed for a severe financial depression — a bad sign for those who sought contributions for any but the most practical of objectives. In this emergency, the women of New England again became active in the raising of funds.

In the summer of 1840, a common greeting of the women of Massachusetts was: "What are you doing for the Fair?" Those who knit stockings, crocheted in worsted of various colors, who were

skilled in embroidered work, or who were merely good at plain sewing strove industriously to get ready for the Fair that was to earn money for the Bunker Hill Monument. Ten years earlier, the women of New England had made a noble effort to secure funds for the monument, but as the contributions from females and children had been limited to a maximum of \$1.00 each, the total was small. Now, although the maximum sum ever raised at a Boston fair was \$3,000, they felt that a sizable sum could be realized in a fair in Quincy Hall, near Faneuil Hall. Despite the criticism that "women were stepping out of their sphere," Sarah J. Hale, the leading spirit in this remarkable effort, persisted.⁹ Quincy Hall was 382 feet long by 47 feet wide, and it was crowded with the 43 tables of things to sell, when the seven-day fair started in September, 1840. A Whig Convention, in this year of a presidential election, undoubtedly helped to increase the attendance at this very successful fair. The price of admission on the first day was double that of the remaining days, which was \$0.25.

The success of the Quincy Fair was phenomenal. The net sum of \$30,035.53 was realized and turned over to the directors of the Bunker Hill Monument Association toward the completion of the Bunker Hill Monument. This amount was nearly one quarter its total cost. The Yankee ladies did not know that two contributions of \$10,000 each, with several smaller donations were available by now. The gift of \$10,000 by Judah Touro was peculiarly heartening, as an example of the expression of the gratitude of the son of an immigrant to the country of his adoption. The father of Touro had been rabbi of a synagogue in Holland. The younger Touro was born in Newport, R.I., in 1776; he had sailed to New Orleans with an assortment of New England commodities and had made money in their sale. A soldier

⁹She was editor of *Godey's Lady's Book* for 30 years, and is credited with promoting the establishment of the last Thursday in November as Thanksgiving Day.

in the Battle of New Orleans, in the War of 1812, he had been given up for dead in that battle. He had become a millionaire and, learning of the proposed gift of \$10,000 by Amos Lawrence, toward the completion of the monument, Touro had matched it. Thus, in the year 1840, the success of the Bunker Hill Monument was assured. It could now be built to the full height planned by Baldwin and Willard — about 220 feet.

The Riggers

Contractor James Sullivan Savage would have no trouble finding good men for the ticklish job of raising and setting the heavy stones of the higher courses of the monument; able sailors, who would take a shore job for a change. Maritime Boston was full of these good riggers, who were used to dizzy heights, and to whom the half hitches, square knots, guys, slings, and tag lines would be easy. Up to this time the monument had been built by day labor, not by contract. Now, Savage had taken a contract to finish the monument for \$43,800, from the elevation of 85 feet to the top. He was well trained in masonry, for he had worked on the job since the start under Willard, whose rigid ideas would not let him take a contract himself for profit on such a patriotic project, but who agreed to superintend the work of Savage to the finish. Savage had the traits of a good contractor — energy, resourcefulness, honesty — and the sense that knew how each detail must be executed toward the end of producing a job to be proud of.

Savage replaced the one-horse capstan of the hoist by a six-horsepower steam engine, an innovation that speeded up progress. The steam engine as a prime mover in land and water transportation had become well established, and its use to drive textile machinery had proved successful. Steam power in the construction industry, however, was a novelty. Shouts and wigwag signals from the setting gang at the top to the engineer on the ground were replaced by a bell-wire signaling system. This must have been a pull bell, for many years would pass before electric bells came into common use.¹⁰

As its lighter stones would be easier to handle, the granite inner cone (newel) around which the stairs wind, was erected a few courses ahead of the walls of the monument. It thus served as a support for the derrick which raised the heavier wall

¹⁰Joseph Henry had developed the electromagnet at about the time of the laying of the lower courses of the monument, and, a few months after its dedication, Morse would operate the first telegraph line between Washington and Baltimore, but the transmission of electric currents by insulated wires even for a few score feet was still too new to receive serious attention on a construction job.

stones. Through apertures in the hollow walls of the newel, a heavy beam (wood?) was passed, upon which the derrick was set.

It is interesting to compare our modern hoisting derrick with the apparatus used to raise the stones for the monument. The derrick of today consists of a guyed, vertical mast, an adjustable boom hinged to the base of the mast, with boom falls, and hoist falls, each with their cables and pulleys, or blocks. At the base of the mast, a bull ring serves to turn the mast by power. The whole combination is called the derrick. When we get accustomed to the old English or American custom of calling the mast the post or derrick, and the boom either the gaff or derrick, a little study enables us to comprehend how the monument was built.

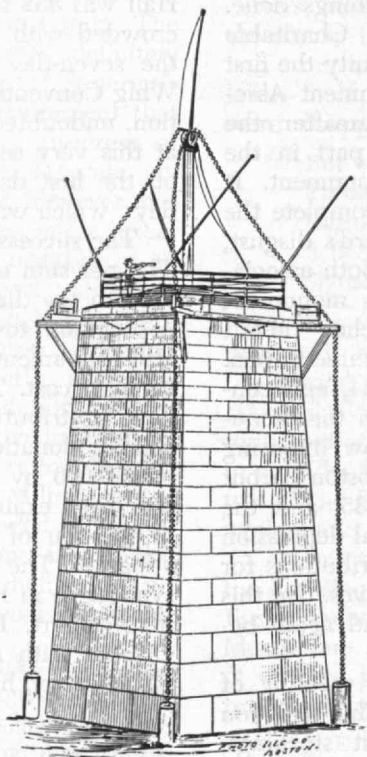
The lower courses were raised by the "Holmes Hoisting Apparatus," designed by a practical seaman of Boston. This device could command a circle 100 feet in diameter. Except that it had no bull ring to turn the mast, it appears much like the derrick of today. With steam power available for the upper courses, Savage seems to have modified the boom of Holmes to serve as a nearly horizontal "lever," on which a "wheel carriage" drew the stone inward, to its desired position for placement. In other words, apparently, the boom became today's monorail. A somewhat obscure, English description of the means used to hoist masonry 100 years ago, tells of two de-

vices. One was a "movable derrick crane," with a vertical post, supported by two timber backstays, and a movable hinged "jib or derrick," which could be today's boom. This assembly, of course, corresponded to today's stiff-leg derrick, in which the back guys are replaced by timber members. The other English device for raising stones was practically exactly like today's traveling crane, and that was the name it went by in England, 100 years ago.

Our construction forebears of over a century ago had to use ropes and chains for all purposes; there were no wire ropes. About the time Savage set his first stone, John A. Roebling was making the first American wire rope cable, in a largely outdoor plant located on a level meadow on his farm in Saxonburg, Pa. Wire rope had real advantages in construction work, because of its superior strength and its much less stretch under load. A crude sketch, dated 1837, shows that the derrick for the monument was guyed by chains, which attached to the top of the mast and passed over timber brackets at the staging level, and thence vertically down to weights at the ground. In this long length, the stretching and shrinking of a rope under rain, load, and temperature changes would be difficult to control.

(Continued on page 438)

Just how much to trust the accuracy of this sketch of 1837 is a question. The artist shows only 21 courses, although 32 courses were in place at this time, when the work stood idle until sufficient funds were collected to allow work to be resumed. The derrick mast is shown very poorly and no boom or "lever" is indicated.



From Bunker Hill Memorial Tablets—1889

AMERICAN EFFORTS TO SECURE Uniform International Coinage, 1863-1869

*The Civil War Stimulated the United States to Play an
Important Role Aimed at Achieving Uniform International Currency*

By D. G. BRINTON THOMPSON

THE idea of a uniform coinage among the principal commercial nations is not new and has been much discussed, but the unanimous recommendations of the International Monetary Conference of 1867 came perhaps the closest to achieving this ideal. The United States was not only a member of this congress but through its representative, Samuel B. Ruggles, played an important role.

The attempt to unify weights and measures by means of the metric system naturally turned men's minds to the great diversity of coinage. While unification of coinage had been discussed at earlier statistical congresses the matter came to a head at the Fifth International Statistical Congress* held at Berlin in 1863, where a resolution passed in favor of assimilating the coins of different countries.^{1, 2} This resolution was presented by the United States delegate Samuel B. Ruggles. This occasion marks the first time that the United States had an official representative at the International Statistical Congress although unofficial observers attended previous meetings. The American delegate, Ruggles, was a distinguished New Yorker, 63 years of age and of commanding presence. He had been a prominent Whig, a great figure in the enlargement of the Erie Canal, and a noteworthy benefactor of New York City, not only by his permanent improvement of the street system but also as trustee of Columbia College and the Astor Library. He was a personal friend of William H. Seward, Secretary of State, as well as of Hamilton Fish, Seward's successor.³

In August, 1863, Ruggles received a summons to Washington from Seward, who insisted, despite his reluctance, that Ruggles represent the United States at the Statistical Congress that was to meet at Berlin on September 6.⁴ Appointed on the 14th he "was orally but specially directed by President Lincoln, and by Mr. Seward, the Secretary of State, to present to the International Statistical Congress at Berlin such statistical and other evidence of the resources of the United States as would exhibit to Europe the ability of the National Government fully to maintain its legitimate authority in the struggle then pending, and to save the American Union from dismemberment and ruin."⁵ Ruggles' wide experience in both public and private life and his interest in statistics made him a good choice for the position. Seward had broad motives in taking this action; as Henry

Adams said of the Secretary's activities in 1863, "Mr. Seward set vigorously to work and sent over every important American on whom he could lay his hands."⁶

Much of the business at the congress had to do with a uniform international system of weights, measures, and coins. The discussion, particularly in relation to coinage, laid the groundwork for later important international debate. On this question the delegates agreed on two resolutions, which declared first, that the number of existing units of money should be reduced, should be decimally subdivided, and should be of the same degree of fineness; and second, that an international congress should be called to deal with these problems. Hope was expressed by some that the United States and Great Britain would agree to a common gold standard, and that something would be done to standardize silver coinage on a wider basis.² Ruggles "advocated universal unification on the basis of the French gold piece of five francs" and declared the effort to establish a fixed ratio between gold and silver would prove a "vain attempt."⁷ The idea of monetary unification on the basis of the five-franc gold piece or multiples thereof, which was agreed to at the Monetary Conference of 1867 and will be explained later, may have occurred to many but it seems certain that Ruggles was the first to bring it before an international body. He probably obtained most of his ideas from Henry R. Linderman, Director of the Mint of the United States, who had previously outlined the scheme in a letter to the Treasury Department.⁸ Ruggles acquired a real enthusiasm for a unified currency among the principal nations of the world, and inspired the Chamber of Commerce of the state of New York to take considerable interest in the matter.

With the spirit of a true showman, Napoleon III decided to hold an International Exposition at Paris in 1867 which should be a wonder to the world for years to come. Thirty commissioners, representing the United States in various capacities, arrived in Paris in March, 1867. Ruggles, Frederick A. P. Barnard, President of Columbia College, John P. Kennedy, and one Smith were appointed to consider a uniform system of weights, measures, and coins; Ruggles and Kennedy were assigned to the subcommittee dealing exclusively with coins.⁹ Ruggles advocated the adoption of a 25-franc gold piece, and Kennedy concurred. Ruggles believed this action proved one of

* Please see numbered references at end of article, page 434.

the influences which determined the French Government to issue a hurried call for an International Monetary Conference.⁹ This conference reached such important decisions that a brief review of monetary history, particularly in the United States, is advisable.

The Mint Act of 1792 in the United States provided for the free coinage of both gold and silver at a ratio of one to 15. Since the ratio between silver and gold was 15½ to one in the open market, the gold coins were undervalued. Because of Gresham's law or for other reasons the gold coins disappeared from circulation. Almost all of the silver coined was in denominations of less than \$1.00. In 1834, Congress, believing the scarcity of gold coin undesirable, changed the ratio between the metals to 16 to one by reducing the weight of the gold dollar. In the period from 1834 to 1860, inclusive, roughly \$450,000,000 in gold was minted, most of it after the gold rush of 1849. This large amount of gold coinage circulated freely and formed a sizable proportion of the circulating medium. In the same period, total silver coinage amounted to less than \$150,000,000, only \$2,700,000 of which consisted of silver dollars. During the Civil War both gold and silver coins disappeared and paper bills or "shipplasters" came into use even in the place of five-cent coins.^{10, 11}

Great Britain had been on the gold standard since 1816, but she felt concerned over the fate of silver in other countries especially because of the large amount of silver held in India. France had been on a bimetallic standard since the Revolution at a ratio of 15½ to one. In 1865 France, Italy, Belgium, and Switzerland had formed a monetary alliance known as the Latin Union with the franc as the unit of exchange. Most of the other states of Europe were on a silver standard.

To return to the *Exposition Universelle de 1867*, Seward received from Berthemy, representing the French Government, a formal invitation, dated May 27, to an international monetary conference to meet in Paris on the 17th of the following month to take up the "general question of uniformity of coinage." Ever since January there had been a desultory correspondence between Berthemy and Seward, the former inquiring in general terms the latter's opinion upon American participation in some agreement on the subject of coinage with the powers that had concluded the monetary convention of 1865. Seward had replied in equally vague terms, expressing his interest.¹²

Ruggles was busy on the Exposition's subcommittee on coins, which did not finish its labors until June 17, the very day the International Conference was to begin. In May he had an interesting exchange of letters with John Sherman, chairman of the Finance Committee of the Senate. He wrote to Sherman, then in Paris at the Hotel Jardin des Tuileries, telling him briefly of the work being done by the subcommittee. He added: "May I ask what, in your opinion, is the probability that the Congress of the United States of America would agree at an early period to reduce the weight and value of our American dollar, to correspond with the present weight and value of the gold five-franc piece in France, and how far such a change would commend itself to your own judgment."

Sherman replied next day that although the matter had hardly been discussed in Congress, "I feel quite sure that Congress will adopt any practical measure that will secure to the commercial world a uniform standard of value and exchange . . . As coin is not now in general circulation with us, we can readily fix by law the size, weight and measure of future issues . . ." ¹⁴ The promptness of the reply suggests that Sherman had previously discussed this matter with Seward or Ruggles or both. Seward also looked with favor on this plan of unification.

Opening of Conference

The International Monetary Conference opened on the date set, June 17, with "all the independent sovereignties of Europe, with the possible exception of some small portions of northern Germany" in attendance, but the United States was the only non-European country represented. Each nation had one vote. The congress agreed to five propositions, namely:

1. A single standard exclusively of gold.
2. Coins of equal weight and diameter.
3. Coins of equal quality, nine-tenths fine.
4. The weight of the five-franc gold piece, 1612.9 milligrams with its multiples, to be the unit. Issuance of a 25-franc gold piece unanimously recommended to serve with half eagle and sovereign as international coins.

5. Coins of each nation to bear the names and emblems preferred by each, but to be legal tenders, public and private, in all.¹⁵

The official record of the conference shows that Ruggles, the American representative, played an active part in the proceedings. In the early part of the session he pointed out the importance of achieving monetary union without delay, since (because of the Civil War) the United States then had no circulating coinage to speak of, and since the increased volume of coinage in other countries would, if action were delayed, make international standardization burdensome. Although bimetalism existed legally, he said that since 1834 we had been practically on the gold standard and had minted only a small number of silver dollars.¹⁶

At the third sitting, June 20, the important question of the gold standard came to the vote. The conference voted unanimously in favor "of adopting the exclusive gold standard, leaving each state the liberty to keep its silver standard temporarily."¹⁷ The delegate from the Netherlands cast his vote with a minor reservation. Ruggles insisted on the advisability of coining a 25-franc gold piece to correspond to the sovereign and the half eagle, and submitted a written argument to that effect. When the question arose concerning the date of the next meeting (at which time the delegates were to report the action their governments were prepared to take on the proposed unification of coinage), he argued that it would be well not to meet before May 15, 1868, so as to allow our congress a chance to deliberate. He was overruled, however, and February 15 was chosen. The conference adjourned on July 6, 1867.

This international conference is distinguished in that it reached a unanimous agreement on a course of action. Much credit is due to the committee on

agenda; its seven members included Ruggles, with Thomas Graham of Great Britain as chairman. The American delegate had been prominent in the deliberation, and, moreover had kept in close touch with Washington. The international monetary conferences of 1878, 1881, and 1892 broke up in complete disagreement, which indicates poor preparation; for an international conference should not be called unless there is some likelihood of a certain amount of agreement. Unfortunately, international conferences are sometimes called for reasons that are not too much concerned with international accord. Berthemy, French Imperial Foreign Minister, wrote to Seward after the conference, praising our representative highly. Both Seward and Hugh McCulloch, Secretary of the Treasury, replied praising the conference on the result of its labors.^{13, 14, 18}

Seward had requested Ruggles to make "observations" of the conference and he was not the man to allow such an opportunity to escape. From Paris, on November 7, he dispatched a long letter to Seward which when printed covered 16 pages.¹⁵ He showed that 72,000,000 people used the franc; that, whereas the United States would certainly not have more than \$300,000,000 in gold to recoin, and Great Britain \$500,000,000, the states that used the franc would have \$1,800,000,000 to remint. Furthermore he wrote:

We cannot wisely or rightfully remain in continental isolation. Integral portion of the mighty organism of modern civilization, let us fraternally and promptly take our part in the world-wide works of peace . . .

The establishment of the single standard exclusively of gold, is in truth the cardinal, if not the all-important feature of the plan proposed by the conference, relieving the whole subject, by a single stroke of the pen, from the perplexity and indeed the impossibility of permanently unifying the multiplicity of silver coins scattered through the various nations of Europe. It is a matter of world-wide congratulation, that on this vital point the delegates from the nineteen nations represented in the conference were unanimous—not excepting France itself, so strongly wedded by its national traditions to a double standard.¹⁶

He reasoned that the necessity of changing slightly the gold content of the dollar should cause no anxiety, since "no practical inconvenience was experienced by the Act of Congress of 1834, which reduced the weight of the gold dollar more than five per cent."

Returning to America in November, Ruggles went to Washington, where he presented a report personally to President Johnson, who "did not seem quite to understand the matter."¹⁹ He also gave both the President and Seward a specially minted 25-franc gold piece as a gift from the French Government. Johnson and Seward wrote letters of thanks to the French authorities commending their efforts "to produce a common coin for the use of the nations."²⁰

Despite the rare exhibition of international unanimity at the monetary conference, little came of it. Ruggles endeavored to press the matter through Congress. Frederick T. Frelinghuysen, Senator of New Jersey, introduced a bill March 3, 1868, to accomplish the purpose, and it was referred to the Committee on Finance. In that committee it became combined with another bill on the subject of coinage, and in an amended form reported favorably by the majority.

An adverse minority report was also presented. The bill contained 10 sections. The first three were important, establishing the weight of the \$5.00 gold piece equal to 25 francs, fixing the weight of subsidiary silver, discontinuing the silver dollar, and making the new gold coins legal tender for all payments "except for such existing bonds of the United States as are payable in coin." This last provision aimed to maintain the integrity of the United States in its promise to pay in terms of the old dollars and would have entailed the expenditure of only a few more pennies per dollar.^{13, 21}

John Sherman of Ohio, chairman of the committee, made the favorable, and Edwin D. Morgan of New York, the adverse, report. The reports of the two senators, with Ruggles' report appended, were published by the Senate. Sherman repeated the various arguments already noted in favor of an international coinage and showed the trifling effect of the change in weight of the dollar. Morgan, in his minority report, said that the change in the dollar "should be made only after the most mature deliberation," and he pointed to the disturbed times as a poor period in which to make this weighty decision. Furthermore, he saw no valid reason why the dollar as it stood should not be the international standard, and he added a letter from a Mr. Dunning objecting to the franc since its weight could only be expressed by an awkward fraction in the metric system.^{22, 23} These last two objections were continually raised against the suggested standardization. Both the flag-waving patriot and the stickler for metric round numbers could see no virtue in the use of the franc as a standard. On June 9, Sherman, for the committee, asked "that the subject be postponed until the next session of Congress without further action," which was agreed.²⁴ That action seems to have marked the end of that particular bill.

In continental Europe many nations had joined the Latin Union, others were seriously considering doing so, and all the important remaining countries seemed favorably disposed to the 25-franc gold piece as a standard. In Great Britain the Royal Commission appointed to investigate the matter reported in 1868. The commission while agreeing with much that was done at the monetary conference stated "we do not recommend that this country should merely adopt a gold coin of the value of 25fr, to be substituted for the sovereign."²⁵ They were frank in describing many of the advantages that would accrue if the principal nations of the world assimilated their coins but doubted whether Great Britain would benefit sufficiently to warrant changing the value of the sovereign with its attendant difficulties. The tone of the report was mild and certainly did not shut the door against further negotiations. The Canadian Parliament was considering a bill to follow the lead of the United States in the matter.

In December, 1869, Sherman made another attempt "to promote international coinage" by introducing an appropriate bill. Evidently he ran into some difficulty in committee for on February 8, 1870, he offered a resolution requesting the President "to write a correspondence with Great Britain and other foreign
(Continued on page 432)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Robnett Aids Brooks in Administration of New School

ANNOUNCEMENT comes from E. P. Brooks, '17, Dean of the School of Industrial Management at the Institute, of the appointment of Professor Ronald H. Robnett as associate dean of the new School at M.I.T. In his new post Professor Robnett will share with Dean Brooks in the administration of the School of Industrial Management which will open next autumn. The School was established with a grant of \$5,250,000 from the Alfred P. Sloan Foundation last year, and an additional \$1,000,000 was recently granted for a program of research on problems of industrial management.

Professor Robnett, who holds the rank of professor of accounting in industrial management, has also served recently as fiscal officer of the Division of Industrial Coöperation at the Institute.

A native of Salem, Ore., where he was born in 1905, Professor Robnett was educated at the University of Oregon, from which he was graduated with the degree of bachelor of science in 1928. He remained at the University of Oregon for four years after his grad-

uation, serving as assistant graduate manager. He then did graduate work at Harvard University, receiving the degree of master of business administration in 1934, the year in which he joined the staff of the Institute as an assistant in the Department of Business and Engineering Administration. He was promoted to the rank of assistant professor in 1937, associate professor in 1942, and has held his present rank since 1947. During 1942 he served as visiting lecturer in accounting at Harvard University.

Professor Robnett was a member of the Institute's Committee on Educational Survey from 1947 to 1950 and was a member in 1947 of the Advisory Board on Relationships of the Atomic Energy Commission with its contractors. In 1948 he served on the Advisory Committee Research and Development Contracts of the Department of the Army, and in the following year was consultant to the chairman of the Research and Development Board of the Department of Defense.

Professor Robnett is a member of the National Association of Cost Accountants, Boston Chapter, and has been a director of that organization since 1937. He served as its president in 1944-1945. He is also a member of the American Accounting Association and of the Chamber of Commerce of Cambridge.

Campus Room Adieu

THE 289th dinner meeting of the Alumni Council, and the last scheduled to be held in the Campus Room of the M.I.T. Graduate House, was called to order on April 28 by Alfred T. Glassett, '20, President of the Alumni Association. With 122 members and guests present, Mr. Glassett announced that future meetings would be held in the Faculty Club in the Sloan Building, and expressed appreciation of the cordial hospitality extended by the management of the Graduate House for the past several years.

Donald P. Severance, '38, Alumni Secretary, reported that a budget for \$36,595 for the fiscal year 1952-1953 had been reviewed by the Committee on Audit and Budget and approved by the Executive Committee which also appointed, for the following year, H. E. Lobdell, '17, as Executive Vice-president, Mr. Severance as Secretary and Treasurer, Henry B. Kane, '24, as Director of the Alumni Fund, and Madeline R. McCormick, as Assistant Treasurer.

During April, 10 members of the Institute's Faculty and staff visited 12 alumni clubs from Albany to Honolulu. A new club was formed on April 21 in Scranton, Pa., when the M.I.T. Club of Northeastern Pennsylvania held its organization meeting. Nominations submitted by the Committee on Nominations for Departmental Visiting Committees were also read, and, as another point of business, Mr. Kane reported that 6,800 Alumni had contributed \$152,000 in the current year to the Alumni Fund.



M.I.T. Photo

Professor Ronald H. Robnett

Associate Dean, School of Industrial Management

Albert F. Sise, chairman of the Faculty Club's House Committee, spoke on facilities which the new club quarters would offer upon opening on May 7.

President Killian introduced Professors Ralph E. Freeman, Head of the Department of Economics and Social Science, and Erwin H. Schell, '12, Head of the Department of Business and Engineering Administration. After mentioning briefly the part these two men and their Departments were playing in the genesis of the School of Industrial Management, Dr. Killian presented E. P. Brooks, '17, Dean.

In speaking on plans for the School of Industrial Management, Dean Brooks pointed out three important advantages which came to the new School. First of all, the Sloan Foundation had made available an excellent building to house the School, and had made a grant of \$1,000,000 to encourage research in the field of management. In addition, the environment of M.I.T. with its extensive background in engineering and science was propitious for developing the new School. Finally, the Course in Business and Engineering Administration, already with an outstanding record of achievement, would become the undergraduate element of the new School.

In anticipation of opening the new School in the fall of this year, an advisory council was established to assist in developing policies and long-range plans.

Investigations are currently being made in three broad areas as a means of crystallizing long-range planning for the School. Since industrial management is largely concerned with problems of distribution, efforts are being examined of the best methods of teaching this topic on a functional basis rather than dealing with individual products. Another fundamental question to be answered is how best to give courses in engineering and science to those planning to enter the field of management. Finally, the best means must be found to teach students of industrial management the social studies through development of fundamentals, rather than by exposure to a conglomeration of individual and disconnected topics.

Brown Heads Course VI

THE appointment of Professor Gordon S. Brown, '31, as Head of the Department of Electrical Engineering, has been announced by James R. Killian, Jr., '26, President. As Associate Head since 1950, Professor Brown has shared administrative responsibility of the Department of Electrical Engineering with Professor Harold L. Hazen, '24. He succeeds Professor Hazen who will become dean of the Graduate School on July 1, upon the retirement of John W. M. Bunker.

Born in New South Wales, Australia, in 1907, Professor Brown received the diploma of mechanical and electrical engineering in 1925 from the Melbourne Technical School. From M.I.T. he received the degree of bachelor of science in 1931, the master's degree in 1934, and his doctorate in 1938. He joined the Department of Electrical Engineering in 1931 as research assistant, was appointed assistant professor in 1939, associate professor in 1941, and became professor of electrical engineering in 1946.

Professor Brown's work at the Institute, for which he is internationally known, has been devoted to the

development of measurement and control devices. Prior to World War II he was engaged in the design and construction of the cinema integrator and an automatic curve follower. He was appointed director of the servomechanisms study at the Institute in 1941 when the Institute had the only university servomechanisms laboratory in the nation. At the outbreak of World War II, Dr. Brown and his colleagues immediately undertook a program of research for the armed services that contributed notably to successful operations against the enemy. Since the end of World War II, the Institute's Servomechanisms Laboratory, which Dr. Brown headed, has been engaged in research on important industrial problems, including the design and construction of control mechanisms for the Brookhaven National Laboratory, automatic controls for a chemical manufacturing plant, and a precision-controlled milling cutter.

Professor Brown was consultant to the National Defense Research Committee, and a special consultant on fire control for the War Department during World War II. For his contributions to national research problems during the war, he received the Presidential Certificate of Merit in 1948.

Professor Brown is coauthor, with Albert C. Hall, '37, of a volume on *Dynamic Behavior and Design of Servomechanisms* and, with Donald P. Campbell, '43, Associate Professor of Electrical Engineering, of another book entitled, *Principles of Servomechanisms*. In addition, he is author of a number of technical papers in engineering and scientific publications.



M.I.T. Photo

Professor Gordon S. Brown, '31
Head of the Department of Electrical Engineering



M.I.T. Photos

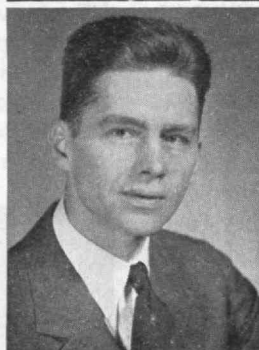
Professorial Progress

PROMOTIONS on the Faculty of the Institute which will become effective July 1 include nine who become professors, 13 who are advanced to associate professor, 26 new assistant professors, and nine instructors.

Members of the staff promoted to the rank of full professor are: John C. Sheehan and Walter H. Stockmayer, '35, both of the Department of Chemistry; Max F. Millikan, Department of Economics and Social Science; Lan Jen Chu, '35, Arthur E. Fitzgerald, '31, and John G. Trump, '33, all of the Department of Electrical Engineering; Karl W. Deutsch, Department of English and History; Ascher H. Shapiro, '38, Department of Mechanical Engineering; and Howard F. Taylor, 2-46, Department of Metallurgy.

Assistant professors promoted to the rank of associate professor are: Thomas M. Hill, Department of Business and Engineering Administration; T. William Lambe, 2-44, Department of Civil and Sanitary Engineering; George C. Newton, Jr., '41, and William M. Pease, '42, both of the Department of Electrical Engineering; Thomas H. D. Mahoney and Theodore Wood, Jr., both of the Department of English and History; Ernest E. Lockhart, '34, Department of Food Technology; August L. Hesselschwerdt, Jr., '31, Brandon G. Rightmire, '41, and Warren M. Rohsenow, all of the Department of Mechanical Engineering; J. Harvey Evans, Department of Naval Architecture and Marine Engineering; and Bernard T. Feld and David H. Frisch, '47, both of the Department of Physics.

Promotions to the rank of assistant professor are: Roland F. Beers, Jr., '51, Department of Biology; Cyril C. Herrmann and Robert G. James, both of the Department of Business and Engineering Administration; George B. Baldwin, '50, and Mrs. Elspeth D. Rostow, both of



J. C. Sheehan
W. H. Stockmayer, '35
H. F. Taylor, 2-46
J. G. Trump, '33

the Department of Economics and Social Science; Charles W. Adams, '48, Ernest J. Angelo, Jr., '49, and Rudolph J. Cypser, all of the Department of Electrical Engineering; Leslie H. Fishel, Jr., Robert L. Koehl, James G. Kelso, and Arthur Mann, all of the Department of English and History; Samuel A. Goldblith, '40, and John T. R. Nickerson, '32, both of the Department of Food Technology; William H. Dennen, '42, Department of Geology; George H. Allen, '48, and Steven A. Coons, '32, both of the Section of Graphics; John A. Clark and Stephen J. Kline, I-Ming Feng, Erwin G. Loewen, '49, Tau-Yi Toong, '48, and J. Lowen Shearer, '50, all of the Department of Mechanical Engineering; Clyde M. Adams, Jr., '49, and Earle R. Marshall, '48, both of the Department of Metallurgy; and George E. Condoyannis, Department of Modern Languages.

New appointments include Jan R. Schnittger who will be assistant professor in the Department of Aeronautical Engineering.

Members of the staff advanced to the rank of instructor include: William L. Maini, '51, Department of Building Engineering and Construction; André R. Barbeau, Harold S. Oakes, Jr., Orville D. Page, and William A. Youngblood, all of the Department of Electrical Engineering; Phineas Alpers, Section of Graphics; Donald R. Walker, '50, Department of Mechanical Engineering; Frederick Sanders, Department of Meteorology; and George W. Clark, Department of Physics.

Appointments with the rank of instructor include: Herbert M. Voss, '50, Department of Aeronautical Engineering; and Iain Finnie, '50, Department of Mechanical Engineering.

C. B. Biezeno, Professor of Applied Mechanics at the Technical Institute of Delft, Holland, has been appointed visiting professor of mechanical engineering for the 1952 fall term.

(Concluded on page 430)

BUSINESS IN MOTION

To our Colleagues in American Business...

This might be called "The Case of the Mysterious Mercury." It is reported because the solution provides an interesting example of the value of industrial research. A Revere customer who makes tanks of Herculoy reported that one of them had developed a serious crack about two inches long, and thought it must be due to a defect in the metal. Herculoy is a silicon bronze with the corrosion resistance of copper plus the strength of mild steel. It is exceptionally easy to weld by standard commercial methods, yet the crack occurred adjacent to the weld at the tank fitting.

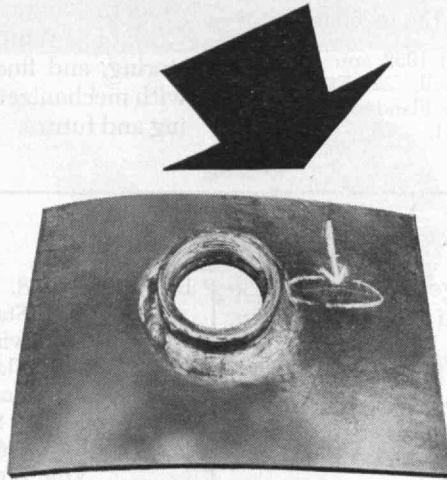
Herculoy has many admirable qualities, which lead to its specification for a wide variety of products. We seldom hear reports of difficulties with it, and such cases upon investigation usually turn out to be the result of failure to follow the quite simple requirements for successful fabrication, requirements which any properly-equipped shop can meet. However, this crack in the tank, occurring in the plant of an experienced fabricator, did not fall in any usual pattern. So we asked that a section, including the weld and the crack, be sent to Revere Research Department for study.

Visual inspection showed no clear-cut reason for failure. A specimen cut through the weld was uninformative, except that the weld was good. Another micro-section cut through the crack put us on the trail. There was a silvery-gray material between the grains of the metal, resembling neither the Herculoy or the weld metal. In fact, it seemed to be a liquid, which had followed the grain bound-

daries and thus had caused the crack. When the crack itself was broken open and examined under the microscope, some small beads of liquid could be seen. These were positively identified as mercury. This metal is a very useful one, but it is destructive to copper and copper alloys, and should never be allowed to touch them. In fact, some other metals in liquid form, such as solders and brazing metals, can be corrosive if temperatures are too high or maintained too long. It is a tribute to American craftsmanship that processes such as soldering, tinning and brazing are practically always accomplished without damage to the base metal.

We have had a number of cases in which mercury caused difficulty, but this time the source of the mercury could not be determined. The most logical supposition is that a mercury thermometer fell on the tank, but nobody knows for sure. However, we and our customer now know that mercury caused the crack, and that instruments containing mercury should be used with care around copper and copper alloys.

This is just one instance of the work of Revere Research, which operates a well-staffed and equipped laboratory. There are many such laboratories, in every industry, each concerned with the practical solution of problems in manufacture, specification, and use of materials. So, we suggest that if you encounter a mystery in materials it will pay you to get the facts from your supplier's laboratory.



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Speech Sounds Studied

THE Visiting Committee on the Department of Modern Languages* met on November 2, 1951. The following members were present: Messrs. Cooper, Cowan, Russell, and Carlson. Senator Flanders, Mr. Loomis and Father Walsh were unable to attend. Father Walsh, at the suggestion of the chairman, sent a substitute, Leon Dostert, Director of the Georgetown University Institute of Languages and Linguistics in Washington.

The program began with visits to classes and laboratories throughout the morning. After a lunch with the members of the Department staff the meeting proper took place, with reports on the work the staff is doing and the philosophy by which they are guided in their activities.

The work of the Department can be divided into three types: elementary and intermediate language teaching, with acquisition of some facility in speaking or reading and an understanding of the mechanism of

*Members of this Committee for 1951-1952 are: Harry J. Carlson, '92, chairman, Robert P. Russell, '22, Franklin S. Cooper, '36, J. Milton Cowan, Ralph E. Flanders, Alfred L. Loomis, and Father Edmund A. Walsh, S.J.

language as goals; advanced language and literature, where more mature students are given a broader linguistic background or a feeling for the thought and life of a foreign country; and research on language, that is, the study of language as a branch of the science of communication.

Research on the nature of speech sounds is being carried on by three members of the Department, two of whom are on a full-time basis and one on half time. Little is known at present about the characteristics by which speech sounds are identified or discriminated by the hearer. Both analysis and synthesis are being used to cast light on this problem: analysis, through the study of the frequency spectrum of various sounds and the study of the transitions between sounds; synthesis, in an attempt to make human-sounding speech sounds artificially, using the data which analysis of their frequency spectrum reveals.

Present results indicate that solutions are near. The implications of such solutions would be very great, not only for the teaching of speech but also for the branch of science and engineering dealing with speech.

One other research project in a different area has been under the administration of the Department of Modern Languages for the last two years. This is the work of J. Whitney Perry, '31, on classifying, coding, storing, and finding information with a view to use with mechanized data-handling equipment both existing and future.

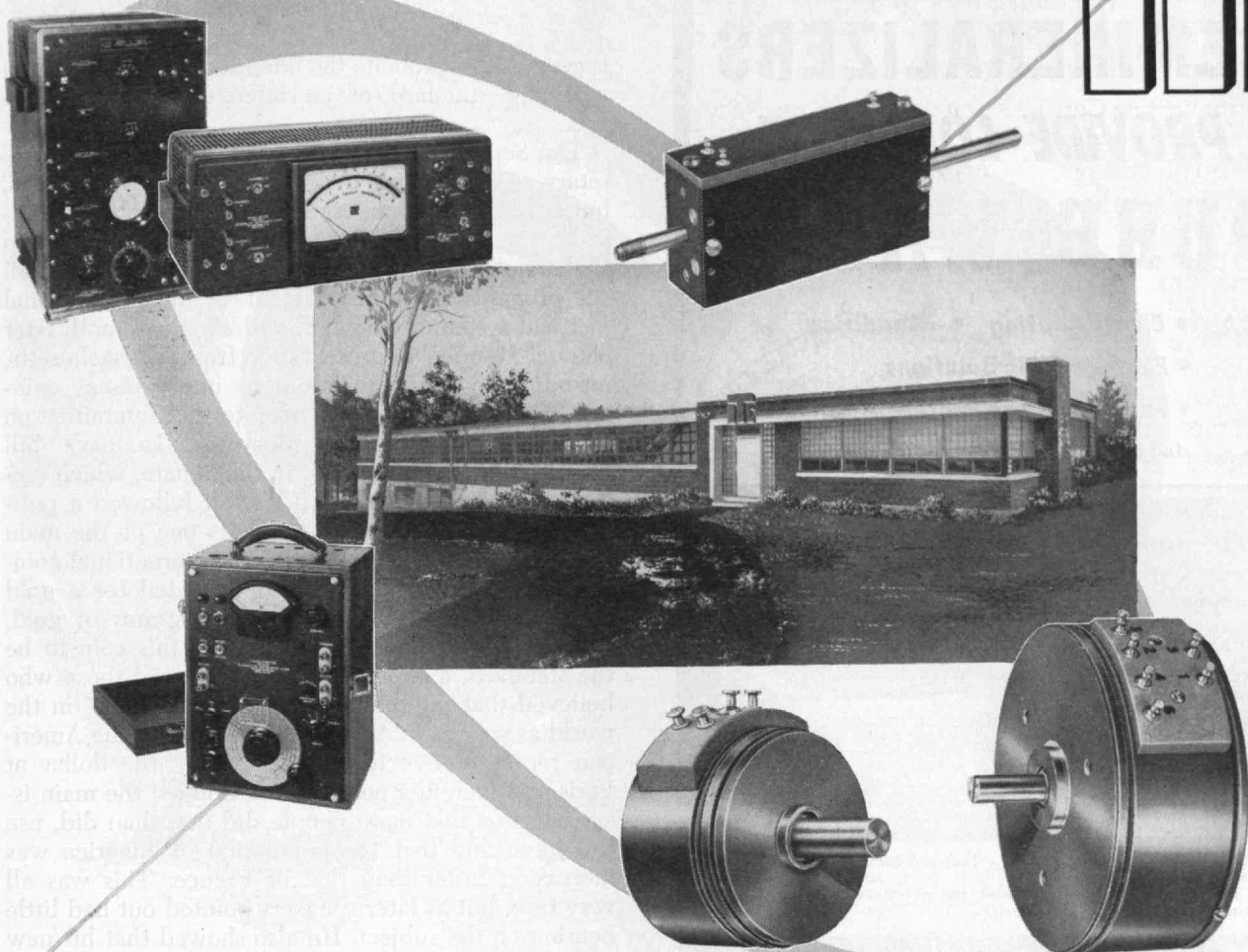
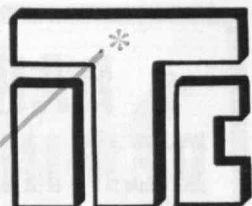
Class Reunions

Plans for class reunions and get-togethers, to be held in conjunction with Alumni Day on Monday, June 9, and on other dates, are being formulated. The dates and places given below have been selected by the classes here listed whose members expect to hold gatherings this June.

- 1892 June 7. Luncheon to be held near Boston. Charles E. Fuller, reunion chairman, Box 144, Wellesley 81, Mass.
- 1897 June 10. Luncheon at 1:00 P.M. at Algonquin Club, Boston. Special Class table at luncheon in Great Court on Alumni Day. John A. Collins, Jr., reunion chairman, 20 Quincy Street, Lawrence, Mass.
- 1900 June 10-12. The Pines, Cotuit, Mass. Elbert G. Allen, Secretary, 11 Richfield Road, West Newton 65, Mass.
- 1902 June 6-8. 50th reunion at Coonamessett Ranch Inn, North Falmouth, Mass. Claude E. Patch, reunion chairman, 862 Park Square Building, Boston 16.
- 1907 June 20-22. Oyster Harbors Club, Osterville, Mass. Bryant Nichols, reunion chairman, 23 Leland Road, Whitinsville, Mass.
- 1912 June 6-8. Snow Inn, Harwichport, Mass. Albion R. Davis, 11 Vane Street, Wellesley 81, Mass., and Ernest W. Davis, 6 Chapman Street, Arlington 74, Mass., are the reunion cochairmen.
- 1916 June 6-8. Coonamessett Ranch Inn, North Falmouth, Mass. Ralph A. Fletcher, Secretary, P. O. Box 71, West Chelmsford, Mass.

- 1917 June 6-8. Wentworth by-the-Sea, Portsmouth, N.H. Stanley C. Dunning, reunion chairman, 105 Irving Street, Cambridge 38, Mass.
- 1921 June 9. Class get-together in afternoon at Hotel Statler on Alumni Day.
- 1922 June 6-8. Sheldon House, Pine Orchard, Conn. Raymond C. Rundlett, reunion chairman, 6 Vine Street, Bronxville, N. Y.
- 1923 June 9. Class get-together at 5:00 P.M. at Hotel Statler on Alumni Day.
- 1925 June 9. Class get-together at 4:00 P.M. at Hotel Statler on Alumni Day.
- 1927 June 6-8. 25th reunion at Oyster Harbors Club, Osterville, Mass. Glenn D. Jackson, Jr., reunion chairman, 54 Lenox Road, Summit, N. J.
- 1932 June 6-8. Curtis Hotel, Lenox, Mass. Thomas E. Sears, Jr., reunion chairman, Park Square Building, 31 St. James Avenue, Boston 16.
- 1937 June 6-9. Weekapaug Inn, Weekapaug, R. I. Philip H. Peters, reunion chairman, 14 Cushing Road, Wellesley Hills 82, Mass.
- 1942 June 7-8. Hotel Griswold, New London, Conn. Charles A. Speas, reunion chairman, 17 Crown Ridge Road, Wellesley 81, Mass.
- 1947 June 6-8. Cliff Hotel, Scituate, Mass. James L. Phillips, reunion chairman, Masconomo Street, Manchester, Mass.

For additional information and the latest details please consult the class secretary or the reunion chairman, so that you may make satisfactory arrangements for attendance at your reunion.



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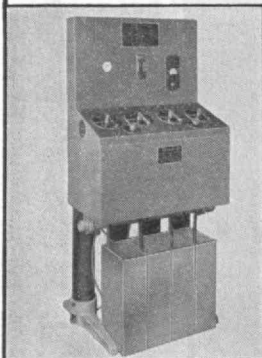
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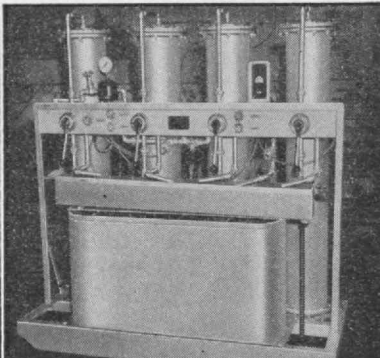
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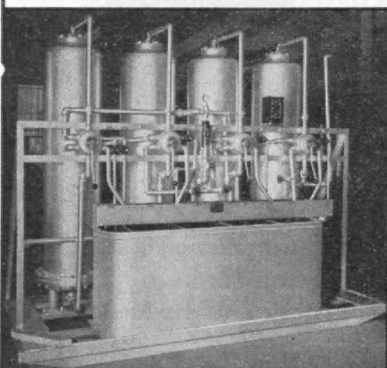
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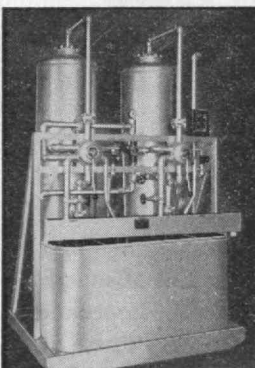
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UNIFORM INTERNATIONAL

COINAGE, 1863 - 1869

(Continued from page 425)

Powers . . . to promote the adoption . . . of a common unit and standard of an international gold coinage. . . .²⁶

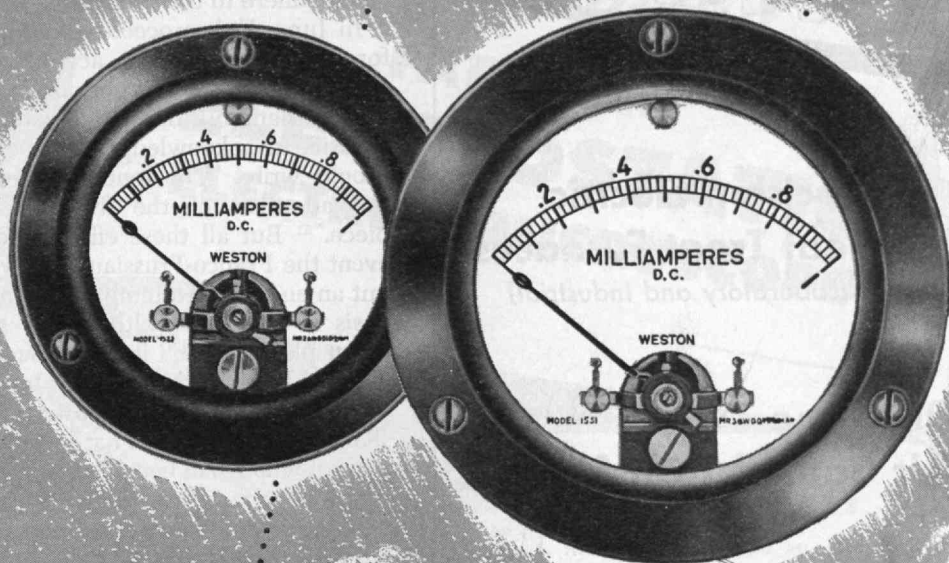
The Senate acted favorably and in due time Secretary of State Fish made the requested inquiries, but before he did certain events in the House modified his action. William D. Kelley, congressman from Philadelphia, on February 7, 1870, introduced a bill "to promote the establishment of an international metrical system of coinage" and about a month later Samuel Hooper, Representative from Massachusetts, introduced a bill "to promote international coinage."²⁷ Both bills were referred to the Committee on Coinage, Weights, and Measures. Hooper's bill largely followed Sherman's in the Senate, which embodied Ruggles' ideas. Kelley's bill followed a radically different plan and represents one of the main rocks on which the proposition of international coinage foundered in Congress. It provided for a gold dollar of exactly one and one half grams of gold, thereby suiting the metrical purists; this coin to be the standard, a stipulation which pleased those who believed that the dollar should be "almighty" in the world as well as in America. He criticized the American representative for not upholding the dollar at Paris and then in a polemic that dodged the main issues argued that more people did not, than did, use the franc and that the population of America was increasing faster than that of France. This was all very true, but as later speakers pointed out had little bearing on the subject. He also showed that his new dollar would blend perfectly with many of the German currencies, and made such a point of this fact that his system became known as the German scheme, as opposed to Ruggles' French scheme.²⁸ Replies to Kelley were delivered by Hooper and Clarkson N. Potter, a New York congressman. Hooper demonstrated that Kelley's measure would require both the British and the Latin Union to raise the gold content of their currencies to an appreciable extent, though it was notoriously more difficult and inconvenient for a country to raise the bullion content of its coinage than to lower it; and that, moreover, no other nation had ever agreed to this scheme, while Ruggles' plan, whatever its failings, had been agreed to in principle by representatives of all the principal nations. He dismissed the even weight idea as of no importance, since coins were not used as weights. Potter supported Ruggles' idea and quoted the really important statistics on the world's gold coinage:

Amount of Current Gold Coinage

Nations using or agreeing to the franc	\$1,450,000,000
Nations using or agreeing to the pound	450,000,000
Nations using or agreeing to the dollar	200,000,000
Nations using or agreeing to other currencies	300,000,000

(Continued on page 434)

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UNIFORM INTERNATIONAL

COINAGE, 1863-1869

(Continued from page 432)

Moreover, he pointed out that the United States had no specie in circulation, while the five-franc gold piece was used in many countries that did not officially adhere to the franc.^{29, 30}

In June, Fish proceeded to communicate with the foreign governments in accordance with the resolution of the Senate of February 8. It is significant that George Bancroft, the noted historian, our Minister to Prussia, in acknowledging the circular from Berlin, should write, "The tendency here is strong toward the adoption of the five and twenty-franc gold piece."³¹ But all these efforts proved sterile. In any event the Franco-Prussian War would probably have put an end to the attempt at a monetary union on the basis of the franc, although if standardization had taken place in 1868 it might have survived the war. The gold standard which the International Monetary Conference of 1867 enthusiastically supported was shortly adopted by the nations of continental Europe most of whom had been on a bimetallic or silver standard. The American representative at the conference was one of the strongest supporters of the gold standard which is interesting in view of the terrific political fight that ensued a few years later before gold became the official standard in the United States. The *New York Times* of July 9, 1867, commented editorially on the work of the Congress, "Whether we shall ever accept this standard or not it is unquestionably as good a one as it is possible to choose."

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(Concluded on page 436)

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William F. Dean, '17

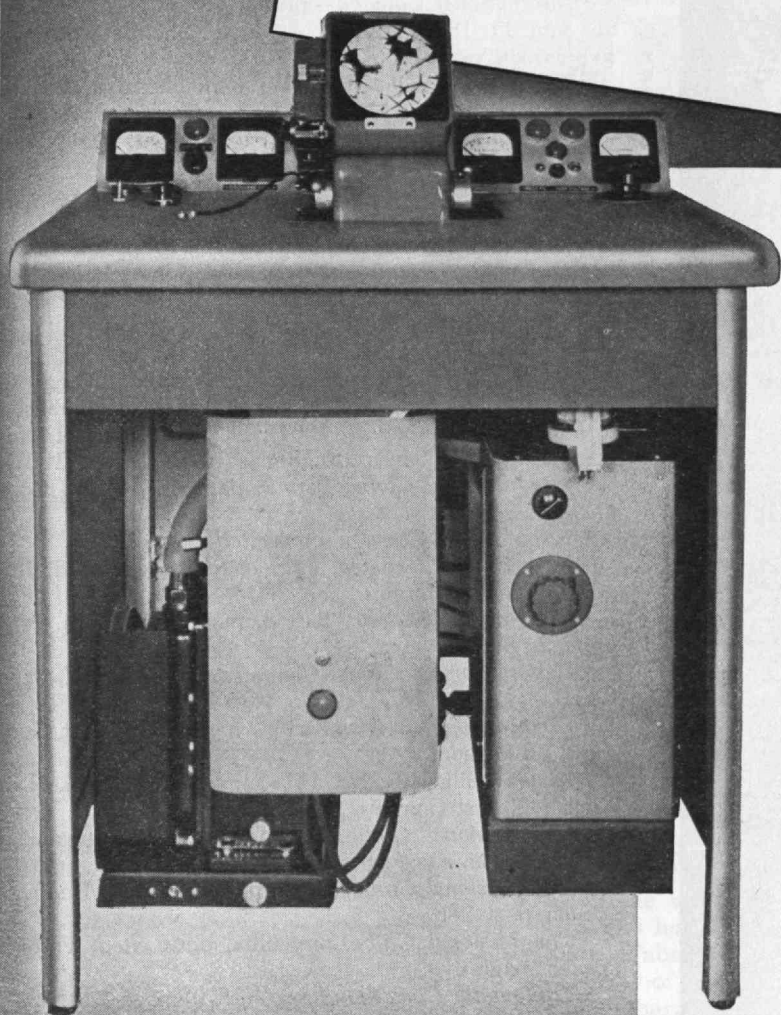
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COINAGE, 1863-1869

(Concluded from page 434)

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²⁸*Congressional Globe*, appendix, 41st Congress, 2d Session, Kelley's speech, page 281.

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³⁰*Congressional Globe*, appendix, *opus cited*, Potter's speech, page 610.

³¹*Diplomatic Correspondence*, (1870) page 240 ff.

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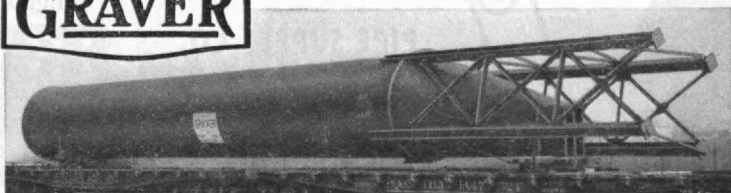
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On paper, Willard had performed the painstaking task of dimensioning every stone, each with its top (the build) a little narrower than its bottom (the bed), so that the true taper of the obelisk would be maintained. To set the stone to line was the chore of the erecting force. On the top of the stone already in place lime mortar was spread, enriched with hydraulic cement, and with a sprinkling of iron filings. (A popular, modern, commercial waterproofing compound utilizes the fact that, upon oxidizing, iron particles mixed with the cement mortar expand, thus reducing the voids and producing a denser mass when the mortar sets.)

Temporary wooden wedges would be placed at the corners of the stone already in place, to support the heavy new stone until the mortar had hardened. When the ponderous stone had been speedily raised from the ground to a level a few inches above the mortar, the engine would be stopped; the derrick adjusted to right or left, and in or out, until the stone was very closely in line. Next, riggers would push on the bridle chain which attached to the two lewises in the stone's top surface, guiding it to its true position in its gentle descent as the engine lowered it the few inches needed to bed it. A tiny fraction of an inch "out-of-line" would be serious, for such errors if repeated, or if not compensating, would visibly throw the monument out of line. On a light stage high above the ground, bracing themselves against gusts of wind, the riggers would be intent on the necessity for such accuracy, but not forgetting their own safety, for no careless workman could work for Savage. They would remember that, while laying the last stone of the 12th course, at the southwest corner, one man had been pushed off (the only death on the project).

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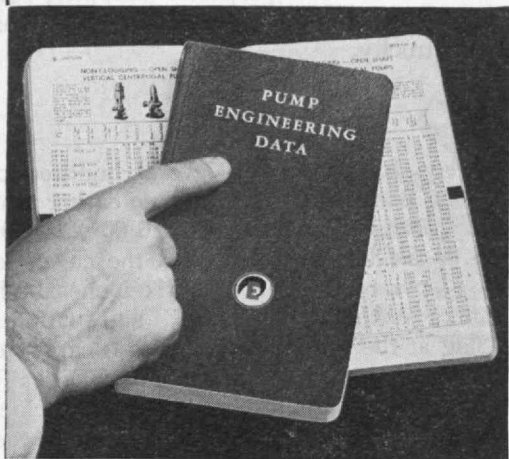
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(Continued on page 440)

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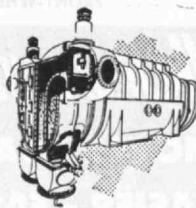
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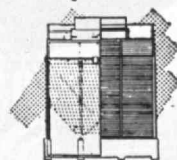
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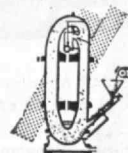
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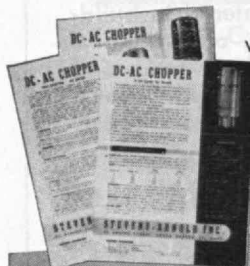
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Eric Martin Wunsch, II, '44

OF YANKEE GRANITE

(Continued from page 438)

its top, that the apex be modified to form a platform to accommodate visitors. Aesthetic Bostonians were much disturbed at this proposal. Happily, the Bunker Hill Monument Association voted down this architectural atrocity.

High Capstone

On Saturday, July 23, 1842, several hundred of our early rising Bostonian ancestors rose earlier than usual to arrive at the monument at 6:00 A.M. On the ground at the base, they studied the capstone; a small stone pyramid, three feet, six inches high, stoutly lashed to the derrick hook, and with an American flag at the top. Standing on the capstone, firmly grasping the hoisting rope, Colonel Charles R. Carnes waited for the signal to hoist. When the clock struck six, a signal gun was fired, and the capstone, bearing the good colonel, started up. In 16 minutes it had reached the top; at 6:30 A.M. it had been bedded, and a national salute announced to all Boston that the Bunker Hill Monument was completed.

By railroad, great multitudes came to Boston for the dedication of the Bunker Hill Monument, nearly a year later, on June 17, 1843. Unlike the time of 18 years earlier, when the cornerstone had been laid, stagecoaches were not the main conveyance for visitors to Boston. Indeed they were decidedly on the way out, and would soon be but symbols of an era of traveling discomfort, as the railroad completely took over. President Tyler and his cabinet attended; Daniel Webster matched with sonorous eloquence his famous speech at the laying of the cornerstone, and there were still 13 very aged surviving veterans of the battle able to attend.

Foucault's Experiment

Seven years later (1850), two Harvard professors checked with elaborate apparatus, paid for by members of the Bunker Hill Monument Association and the Massachusetts Charitable Association, the famous experiment of Foucault which used a long pendulum to prove the daily rotation of the earth. Suspended in the newel by an annealed wire, 210

(Continued on page 442)

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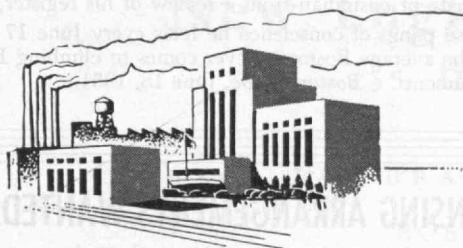
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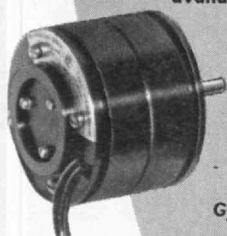
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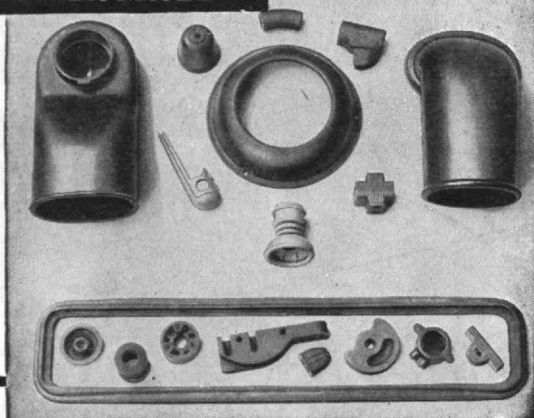
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OF YANKEE GRANITE

(Continued from page 440)

feet long, the oscillations of a pointer, attached to a 31-pound British cannon ball relic of the battle, were observed; and its plane of swing was seen to revolve during the day from right to left of the observer. A sudden shower on a previously bright day complicated the experiment, until Professor Eben N. Horsford discovered the reason. Cooled by the rain the monument's exposed face contracted; its apex moved correspondingly and carried the point of suspension of the pendulum with it. As observed years later on the Washington Monument, Horsford deduced that the side of an obelisk, exposed to the hot sun, expanded, and that its apex followed the sun in the sun's travel from east to west. Such motion is tiny, and the ingenuity of the apparatus to observe it was notable. The path of the orbit of the bob, registering both the earth's rotation and the effect of varying heat on the monument's sides, was described as an irregular ellipse with a major axis of one-half an inch.

Today

Two hundred thousand persons visit Bunker Hill every year. Of these visitors 20,000 pay their \$0.10, and presumably climb the 294 granite steps to the top.¹¹ Very few Bostonians are among these visitors.¹² They are of various types: honeymooners and casual tourists, whose list of the sights to be seen in historic Boston includes the monument, and historically minded youngsters, one of whom was recently caught in a heated argument with his father as to where the order was to "wait 'til you can see the whites of their eyes." Surely, the stout young man who recently lugged 25 pounds to the top—his young daughter—was not typical.

The evidence that the monument is probably the most popular of the historic shrines of old Boston would be as pleasing to the charter members of the Bunker Hill Monument Association as to the present members of this venerable society, which lists among present and past members, 30 generals, 12 admirals,

(Continued on page 444)

¹¹Estimate of custodian from a review of his register, 1951.

¹²"Those pangs of conscience he feels every June 17 are as close as the average Bostonian ever comes to climbing Bunker Hill Monument."—*Boston Globe*, June 18, 1951.

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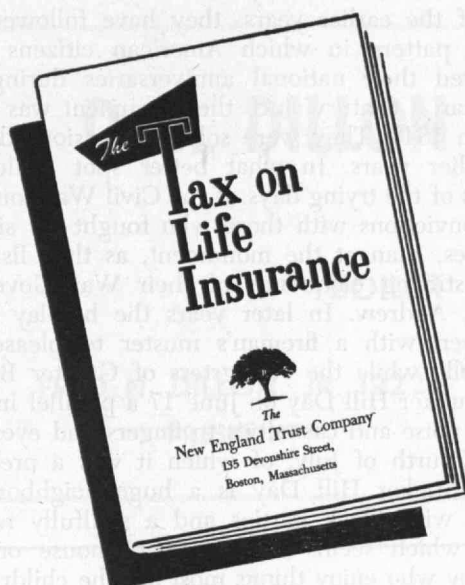
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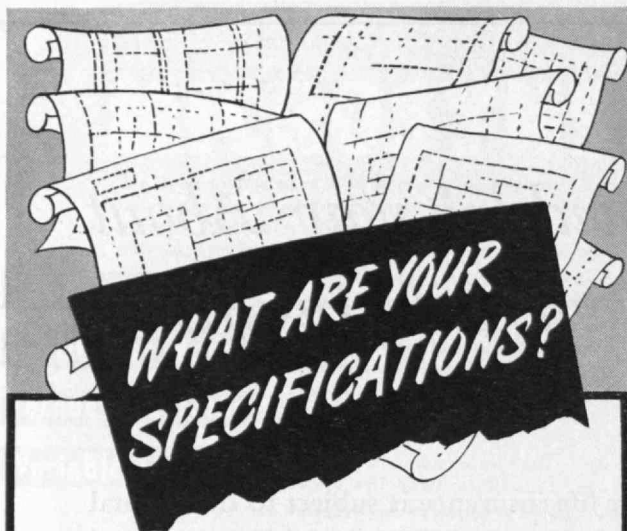
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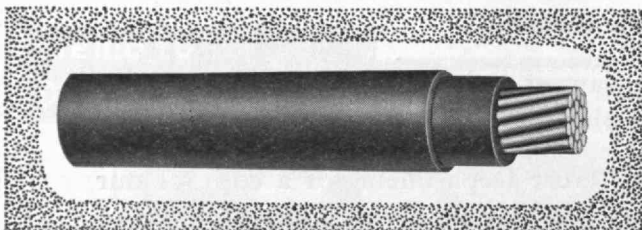
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OF YANKEE GRANITE

(Continued from page 442)

12 Presidents of the United States, a score of Massachusetts governors, 20 mayors of Boston, and 6 presidents of Harvard University. It is a healthful society to belong to, the 1949 *Proceedings* say, in the mention of 46 half-century members of whom 16 were then living.

Many years ago, the Association voted to hold patriotic exercises every year at the monument, and this resolution has been faithfully fulfilled. The annual ceremonies today are very different from those of the earlier years; they have followed the varying pattern in which American citizens have celebrated their national anniversaries during the more than a century since the monument was dedicated in 1843. They were solemn occasions during the earlier years. In what better spot could the Yankees of the trying days of the Civil War compare their convictions with those who fought for similar principles, than at the monument, as they listened to the stirring eloquence of their War Governor, John A. Andrew. In later years the holiday spirit took over, with a fireman's muster to please the older folk, while the youngsters of Greater Boston made Bunker Hill Day on June 17 a parallel in firecracker noise and casualties to fingers and eyesight, to the Fourth of July, of which it was a preview. Today, Bunker Hill Day is a huge neighborhood festival, with block parties and a skillfully routed parade which seems to pass every house on the hill. They who enjoy things most are the children of working people, not of the wealthy families that once lived in the slightly dwellings of Bunker Hill. Each boy or girl can give a visitor the story of the battle in detail, and recite the precise dimensions of the monument. (They collect from tourists for this information, for it is one way by which Charlestown

(Concluded on page 446)

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OF YANKEE GRANITE

(Concluded from page 444)

youngsters get their spending money.) These children would rarely answer to the old names: Prescott, Warren, Putnam, or similar Yankee names. They are mostly of second or third generation European families: proud Americans, fortunate to live near the site of one of America's most famous historical shrines. Their festival is a heartening occasion to witness, for it is American democracy at its best.

Through it all the monument rises above its unadorned settings; except that the crown of the hill has been removed, it could still be the New England hilltop farm on which the battle was fought. The obelisk rises in the simplicity of its straight lines and clean angles, with no curves, and with the somber gray of its harsh-textured masonry unrelieved by any greenery of foundation shrubbery. The rugged monument is symbolic of the stern spirit of those who fought in the battle, and of the determination of those who solved the problem of building this massive memorial to them, in the pioneer days of American architecture and engineering.

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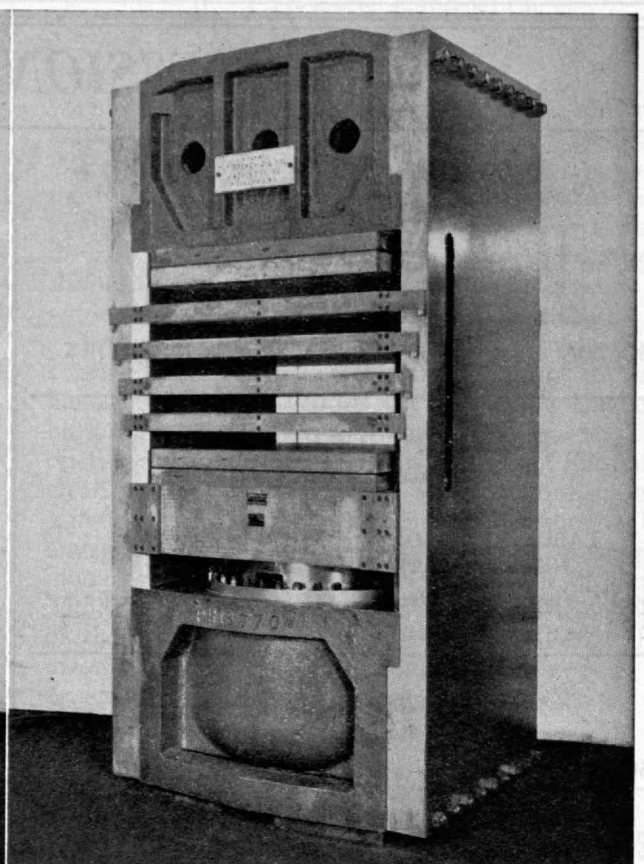
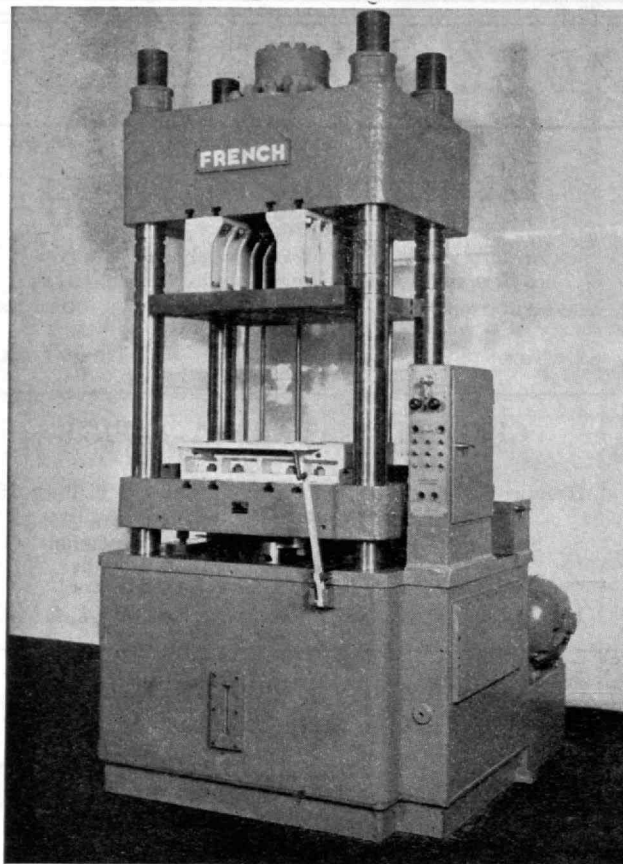
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Alumni AND Officers IN THE News

Alumni Achievements

SAMUEL C. LIND'02, atomic scientist at the Oak Ridge National Laboratory, is the recipient of the 1952 Priestley Medal, highest honor in the field of chemistry in the United States. A former president of the American Chemical Society and dean emeritus of the University of Minnesota Institute of Technology, Dr. Lind is at Oak Ridge at a research consultant on the staff of Clark E. Center, general manager for the Carbide and Carbon Chemicals Company. He is acting director of the laboratory's chemistry division and also a director of the Oak Ridge Institute of Nuclear Studies. Presentation of the award will take place at the American Chemical Society's fall meeting in Atlantic City, N.J.

GEORGE W. BRICKER, JR.'23, has been elected vice-president in charge of organization planning of the Celanese Corporation of America.

The magazine *Photography*, in its "Crystal Jubilee" May issue and in celebration of its 15th year of publication, announced citations to 10 individuals and organizations for their contributions to photography. Among the recognized 10 was HAROLD E. EDGERTON'27, of the Department of Electrical Engineering at M.I.T., for development of the high-speed electronic flash.

Arthur D. Little, Inc., announces the election of ALLEN LATHAM, JR.'30, as vice-president of the company. Dr. Latham will continue as technical director of the mechanical division.

WILLIAM H. ROBERTS, JR.'31, has been elected vice-president in charge of operation by the Glyco Products Company of Brooklyn, N.Y., and Natrium, W.Va.

KENNETH M. LECHORN'42 has been made vice-president of the Sun Tube Corporation of Hillside and Washington, New Jersey.

Authors and Orators

The April, 1952, issue of *Proceedings of the Institute of Radio Engineers* contained the writings of five Technology Alumni. The authors and articles featured are as follows: J. WARREN HORTON'14 wrote "Fundamental Considerations Regarding the Use of Relative Magnitudes"; ERNST A. GUILLEMIN'24, "A Note on the Ladder Development of RC-Networks"; JOHN N. DYER'31, a guest editorial entitled, "The Role of Private Industry in Military Research and Development"; FRANCIS M. GREENE'37, "A Source of Error in the Measurement of Radiated Harmonics"; and WILLIAM N. PAPIAN'48, "A Coincident-Current Magnetic Memory Cell for the Storage of Digital Information."

A new and comprehensive work in the field of architecture, *Forms and Func-*

tions of Twentieth-Century Architecture (New York: Columbia University Press, 1952), includes contributions from four Alumni and one member of the staff at M.I.T. In Volume III, Part II, Chapter 8, VESPER A. SCHLENKER'22 has covered acoustics in buildings for popular gatherings. Volume IV features JOHN A. WALQUIST'26, who writes about banks (Part V, Chapter 27); J. GORDON CARR'29, on bus stations (Part VII, Chapter 43); LAWRENCE B. ANDERSON'30, buildings for athletics (Part VIII, Chapter 47); and PIETRO BELLUSCHI, Dean of Architecture and Planning at M.I.T., on shopping centers (Part V, Chapter 30).

WILLIAM P. ALLIS'23 and MELVIN A. HERLIN'48, both of the Department of Physics at M.I.T., are coauthors of a book entitled *Thermodynamics and Statistical Mechanics* (New York: McGraw-Hill Book Company, Inc., 1952).

ROBERT C. ELDERFIELD'30, who is associated with the University of Michigan, edited Volumes III and IV of *Heterocyclic Compounds* (New York: John Wiley and Sons, Inc., 1952).

ROBERT A. VOGELER'37, formerly resident representative of the International Standard Electric Corporation in Budapest, records the events of his 17 months imprisonment in Hungary in a book entitled *I Was Stalin's Prisoner* (written with Leigh White) (New York: Harcourt Brace and Company, 1952, \$3.75).

ROBERT C. CASSELMAN'39, sales manager of the Polaroid Corporation, spoke on "The Care and Feeding of a New Product" at the April 22 meeting of the Advertising Club of Boston. Mr. Casselman discussed development of the Polaroid Land Camera over a period of several years.

BURNHAM KELLY'41, Associate Professor of City and Regional Planning and Director of the Bemis Foundation at M.I.T., spoke at the April 4 meeting of the Greater New York Safety Council on "Industrial Dispersal to Reduce Vulnerability."

The fundamental concepts and techniques of pulse radar are described in a new third edition of *Principles of Radar* (New York: McGraw-Hill Book Company, Inc., 1952), written by GODFREY T. COATE'47 and J. FRANCIS REINTJES, staff.

In the Public Eye

The oldest living graduate of Technology, WILLIAM A. PRENTISS'75, was featured in a Florida newspaper's columns under the title, "At 98, DB Booster Credits Photo Hobby with Longevity." The Daytona Beach Sunday *News-Journal* of April 27 goes on to describe Mr. Prentiss' absorption with photography and his ability to adapt to the latest developments in the present. He

is quoted as having said: "I've lived through the greatest age of man. I've seen a pioneer and medieval world change through the miracles of radio, airplanes, television and all the other wonderful things. And I'm as eager to keep pace with progress as I was half a century ago." Emphasizing his philosophy, Mr. Prentiss planned to take his first trip by airplane—from Florida to Holyoke, Mass.

First-prize winner of the widely publicized Know New England Contest, sponsored by two Boston newspapers, was OTIS D. FELLOWS'04. Mr. Fellows won \$10,000 in United States Defense Bonds for his ability to identify 54 photographs of New England correctly and for his accompanying statement telling why he likes New England.

Featured on the cover of the March 22, 1952, issue of *Business Week* is JOSEPH S. SHERER, JR.'23, President of Reo Motors, Inc., of Lansing, Mich. On page 88 of the magazine, under the title "Let a Power Mower Do It," the success story of Reo Motors and Sherer's part in the organization is told.

Obituary

HENRY B. BRAINERD'87, April 15.
JOHN B. PAINE'90, August 1, 1951.
ARTHUR D. ROPES'90, March, 1952.
FRED B. MAYNARD'92, April 13.*
STERLING C. COUSINS'94, April 19.*
MORRIS L. JOHNSTON'94, March 8.*
MERRITT S. WILCOX'96, March, 1952.*
ALFRED R. DOTEN'97, January 9.*
WALTER A. GLEASON'97, date unknown.*
FRANK F. COLCORD'98, March 21.
HAVEN SAWYER'99, March 9.*
GEORGE C. GIBBS'00, March 31.*
CHESTER N. CHUBB'01, February 9.*
FRANK W. GREEN'01, February 16.*
FLOYD B. HULL'02, January 13.
LAURANCE M. BUCK'06, Nov. 23, 1950.*
EVERETT S. CASON'06, October 21, 1951.*
PERCY J. COLVIN'07, January 2.*
ALBERT S. HAMILTON'07, Dec. 26, 1948.*
FRANK K. BELCHER'08, March 28.
WILLIAM H. CAMP'09, date unknown.
ARTHUR F. CONANT'09, January 21.
PALMER ST. CLAIR, JR.'14, August 11, 1951.*
LOUIS A. WILSON'14, March 15.*
WILLIAM J. FARTHING'16, March 29.*
SUMNER M. SPAULDING'16, April 10.
LEON L. MCGRADY'17, April 4.*
CLARENCE E. BASSETT'18, March 7.*
RUSSELL B. MCCANN'18, March 16.
LEONARD M. BRUTON'19, February 2, '50.
PERRY B. BRYNE'19, March 14.*
JOSEPH S. NEWELL'19, May 5.
HYMAN P. SELYA'19, March 28.
KENSKE HASHIMOTO'20, date unknown.*
DOUGLAS C. STEWART'22, April 5.
WILLIAM H. MAGRUDER'26, February 5.*
HARRY A. SUTTON'26, in 1951.
STUART PAIGE'39, March 28.

* Mentioned in class notes.

News FROM THE Clubs AND Classes

CLUB NOTES

M.I.T. Club of Albany

The Club held its first meeting of the year on March 13 at the Hotel Wellington. The speaker was C. F. Green, consulting engineer for advanced development in the General Electric Company's Aeronautic and Ordnance Systems Department at Schenectady. Dr. Green gave a fascinating talk on guided missiles which was followed by a lively question-and-answer period. Attending the meeting were: Ralph Bates'14, William Canaday'12, George Conway'25, Reed Dallye'22, Frank Gilson'24, Harold Hedberg'20, Henry MacMillan'24, David McLeod'50, Burt Rickards'99, Edwin Schatz'23, Charles Smart'05, Russell Suter'00, Spencer Standish, 6-45, Sterling Webber'24, and Warren Wilber'34.

The next meeting of the Club was held on April 24 at the Hotel Wellington with approximately 20 members in attendance. The speaker at this meeting was D. P. Severance'38, Secretary-Treasurer of the Alumni Association, who gave an informal talk on M.I.T. at the present time. It was a very enjoyable evening; many questions were asked and everyone was brought right up to date on the current happenings at the Institute. Plans call for the annual election meeting of the Club to be held late in May. — DAVID B. MCLEOD'50, *Secretary*, 536 Providence Street, Albany 8, N.Y.

M.I.T. Club of Central New York

The Alumni of Central New York enjoyed an excellent dinner at the University Club of Syracuse on April 15, followed by a most informative discussion led by Professor E. W. Boehne'28, of the Department of Electrical Engineering at the Institute. Prior to this discussion, Sam McCain'09, President, conducted a business meeting to determine what our membership could do to entertain the Tech crew during its stay prior to the Intercollegiate Regatta, which is to be held here at Syracuse for the first time this year. The membership expressed an almost unanimous desire to entertain the crew in some way. It was suggested that we might take the entire crew out to dinner. As this might interfere with training regulations, it was decided that before any definite plans were made, a committee should be organized to investigate the situation and make recommendations as to the best way to entertain the boys in line with the coach's plans.

Professor Boehne followed with an extremely informative and interesting discussion of recent developments at the Institute. In addition to discussing the

tremendous strides in the Institute's building program, he went on to point out some of the plans for improved student and Faculty activities, as well as changes in the scholastic curriculum. The degree to which the group enjoyed Professor Boehne's talk was evidenced by the lively discussion from the floor which seemed to indicate a particular interest in learning more about the co-operative courses at the Institute. Many present, who have not had an opportunity to visit Cambridge in recent years, were particularly pleased with the opportunity to discuss firsthand the many changes taking place there.

The following M.I.T. men were present: Martin Bardwell'28, Frank Cole'49, John Cowan'47, Gordon Gikison'09, Harold Gray'16, Edwin Gruppe'22, Fred Hungerford'24, Don Kidd'42, David MacLeod'38, Sam McCain'09, H. G. Reynolds'10, E. P. Mikol'48, Ed Miller'23, Charles Lenz'92, Hyde, and — ADOLPH L. SEBELL'40, *Secretary*, 708 Seeley Road, Syracuse, N.Y.

The M.I.T. Club of the Kanawha Valley

Dr. and Mrs. Karl T. Compton recently visited the Charleston, W.Va., area for several days. Dr. Compton addressed the Charleston Open Forum on March 14. His subject was "The Challenge to Education at the Mid-Century." His talk was well received by an audience of some 600 persons at the Morris Harvey College Auditorium. Dr. and Mrs. Compton also were the guests of honor at a luncheon meeting of the Club, held at the Greystone Hotel on March 15. Thirty-eight M.I.T. Alumni and wives attended the meeting. Dr. Compton spoke briefly, then answered a large number of questions asked by the members. — JEAN P. LEINROTH, JR.,'48, *Secretary-Treasurer*, 1512 Barberrry Lane, Charleston 4, W.Va.

The M.I.T. Club of New York

Our annual meeting was held on May 13 at club headquarters. The following slate was elected for the coming year: President, G. Peter Grant, Jr.'35; Vice-presidents, H. D. Kinsey'24, Donald F. Taylor'35, A. Louis Bruneau'38; Treasurer, B. H. Nelson'35; Secretary, Ralph C. Wilts'41; Directors to '55, David M. Broudy'22, Kenneth Nelson, 2-44, P. C. Keith, Jr.'22; Director to '54, M. R. McGuire'41; Director to '53, David Jealous, 2-44.

Dean Brooks'17 gave us an interesting report on the new business school. It looks as if we are going to give Harvard a run for its money. W. I. McNeill'17 was chairman and is to be congratulated on a job well done. He is a classmate of Dean Brooks and had a reunion of the New York members of '17. — On June 5

we are holding our annual golf party at the Scarsdale Country Club, Hartsdale, N.Y. We have challenged the entire Alumni Association to compete for an interclub trophy. There will also be an interclass trophy. Frank Milliken'34 is chairman and has worked out a relatively simple formula for determining the winning class. Tennis and bridge are also available at very moderate prices. We look forward to a large turnout and a successful day. We will be glad to make arrangements for your stay in New York if you plan to attend. — RALPH C. WILTS'41, *Secretary*, American Blower Corporation, 50 West 40th Street, New York 18, N.Y.

M.I.T. Club of Northern California

Forty-six Alumni gathered at the Marines' Memorial Club, 609 Sutter Street, San Francisco, to hear from Professor Edwin H. Schell'12, Head of the Department of Business and Engineering Administration, and to elect officers for the coming year. A nominating committee consisting of Past Presidents Henning Berg'15, Ed Riley'09, and Allen Horton'36 gave the following slate: President, W. O. Thompson'35; Vice-president, R. E. Keyes'40; Vice-president (representing East Bay), J. H. Arnold'31; and Vice-president (representing San Francisco side of bay), G. B. Hulett'34. The slate was unanimously elected. Bert Summers'34 remains perennial secretary.

Passing President, Captain A. B. Court'10, passed the gavel to incoming Prexy Bill Thompson'35 who introduced our guest, Professor Schell. Professor Schell spoke about the problems of the new School of Business Administration which has been given a good boost by the substantial gift of Alfred P. Sloan, Jr.'95, who advised M.I.T. to spend boldly. Professor Schell mentioned that the basic problem of the new school was to provide an education suitable to times which are changing more rapidly than has heretofore been experienced.

Among the local M.I.T. Alumni present were the following: W. L. Wetmore'02, S. T. Carr'06, A. B. Court'10, H. J. Berg'15, E. W. Brown'15, Aubrey Ames'19, W. G. Welch'20, R. A. Wehe'21, H. F. Davies'22, D. F. Johns'22, F. E. Slayter'22, A. G. Crowley'23, M. H. Finley'24, Ira Beals'27, R. L. Cheney'27, P. I. Cole'27, A. G. Reed'27, G. F. Rogers'28, Hugh Wallace'30, J. H. Arnold'31, W. O. Thompson'35, R. W. Hannam'36, Merwin Miller'36, Eric Moorehead'37, John Summerfield'38, N. V. Mihailoff'38, J. A. Chartz'39, John Renshaw'39, A. T. Higgins'40, R. E. Keyes'40, W. R. White'40, Mrs. Barbara L. Goldberg'41, W. D. Howell'41, C. E. Moffet'41, C. B. Steele'42, J. H. Thacher, Jr.'42, R. A. D. Schwartz, 2-44, Ted Malm, 2-46, Tom Bell'47, Marvin Campen'48, E. A. Hart-

sook'48, W. G. Messimer'48, H. N. Smith, Jr., '48, David Walton'48, R. H. Ansfaht'50, and Mel Siegel'50. — BERT O. SUMMERS'34, *Secretary*, 1740 Broadway, San Francisco, Calif. RAYMOND E. KEYES'40, *Assistant Secretary*, 1706 Jaynes Street, Berkeley 3, Calif.

M.I.T. Club of Northern New Jersey

On April 9, the spring meeting of the Club was held at the Hotel Suburban, East Orange. The guest speaker was Professor George R. Harrison, Dean of Science, who gave a very interesting and enlightening talk on "The New Frontiers of Science." Professor Harrison also outlined a few high lights on activities at the Institute.

There was a fair attendance but this was the smallest meeting this season. After the meeting the members enjoyed the usual friendly get-together and refreshments. — ALBERT C. FAATZ, JR., '37, *Secretary*, 22 Midland Boulevard, Maplewood, N.J. RUSSELL P. WESTERHOFF'27, *Assistant Secretary*, 823 East 23rd Street, Paterson, N.J.

CLASS NOTES

• 1886 •

April 21, 1952. The Secretary of '86, M.I.T., thinks that he must be the only living member of the Class as nothing has been heard from anybody for nearly two months. If somebody else were secretary, then "Chase" could tell how it feels to fall in the bathtub, but of course the Secretary cannot put himself in the limelight to the exclusion of everybody else. He might, however, mention the fact that it happened on March 22, and after a month's incapacity he was able to crawl out (not all of the month in the tub!), and in a week or so more (D.V.) he hopes to be where he was physically before the accident. As these brief notes will not be printed before the middle of June and as May 21 will be the last day for sending notes for the July issue (the final number of *The Review* of the 1951-1952 volume), it will not be of much use to lambaste the membership at this time for their shameful neglect of their class duties, unless it might stir someone to send a line or two for the first number of the 1952-1953 volume. Should anyone be so inspired, let him get the material into the Secretary's hands before the 10th of September. Anyone who dies before then will be excused from writing; his obituary will tell of his virtues; his failings will be forgotten. — ARTHUR T. CHASE, *Secretary*, Post Office Box 4, Island Creek, Mass.

• 1891 •

A letter from Charles H. Urban, who played football to the glory of M.I.T. in its year of undefeated victories, amplifies our recent class notes. On that subject, I quote from his letter which may refresh your memories: "That championship was a glorious achievement, won un-

der adverse conditions, for the reason that at that time the Faculty discouraged football as much as it could. Whenever a notice for practice was posted on the little easel blackboard in the lobby of the old building, Francis B. Walker, then President (and there never was a more lovable character than he), would, without saying a word, turn the notice to the wall. Then one of the boys would come along and just as quietly turn the blackboard back again, and so it went. Notwithstanding, our team went ahead and not only won the championship, but never lost a game during the season. There was nothing in your article about what to me was the crowning event in our celebration and that was the night parade which we pulled off, the like of which I venture to say the people of Boston never saw nor ever will see. Every man had on over his clothes a white nightgown, also wore a plug hat. On the gowns were emblazoned in black paint such phrases as, 'We're the champs,' 'You can't beat us,' and so on. Each fellow carried a light of some kind, whether a candle, a torch, a flare, or a lantern, and we paraded through the suburbs singing college songs and giving the Tech yell. We made enough noise to arouse even the staid residents of Beacon Street and Commonwealth Avenue, but the people were with us and cheered as we passed along. We wound up with a tremendous bonfire at the Old South grounds, so that it may be truthfully said that our celebration ended in a blaze of glory."

Harry Young has just received from Mrs. Elizabeth B. Moseley a very thoughtful contribution of \$100.00 to the Alumni Fund, as a memorial for our esteemed classmate, Alexander W. Moseley, who died February 28, 1952. The announcement of his death was in the May issue of *The Review*. — FRANK W. HOWARD, *Secretary*, in care of Bemis Associates, Inc., Post Office Box 147, Watertown, Mass. (Telephone WA. 4-5910).

• 1892 •

It is the sad duty of the Secretary to report the passing on of another classmate. Fred B. Maynard died suddenly at his home, 50 Temple Street, Arlington, Mass., last Easter Sunday, April 13, 1952, at the age of 82. Maynard was with us in the Course in Mechanical Engineering for the larger part of our Course. On leaving the Institute, he became associated in the coffee business in Boston, in which his father had been interested before him, following this line for 57 years until he retired in 1949.

He was an ardent mountain climber, a life member of the Appalachian Club, and had climbed Mt. Washington in the winter 30 times. He was known as the father of the Snow Train to New Hampshire, having originated this idea with the Boston and Maine Railroad in the early part of the century. In the November, 1950, issue of *The Review*, our class notes contained an account of his article in the June number of *Appalachia* on "Sky Line Fireworks," an idea which he originated in 1915 and carried through as a stupendous task in the fall of 1915 and in September, 1916, with great suc-

cess. He started climbing the northern peaks of the White Mountains at the age of 14 and was an enthusiast in this activity until late in life. The White Mountains were his hobby and he always maintained his summer home near the Presidential Range. In later years, his home was located in Jackson, N.H.

Funeral services were held on Wednesday, April 16, in Storey Chapel, Mt. Auburn Cemetery. Carlson, Ober, and the Secretary attended the services. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

• 1894 •

For 28 years Charles Abbot has been studying precipitation and temperature in Washington, D.C., and the Smithsonian Institution has recently published his latest contribution to the subject as No. 9, Volume 117, of the Smithsonian Miscellaneous Collections. The present number gives the dates in 1952 when the average daily precipitation in Washington is expected to exceed the average for all other dates. Abbot has shown that there is a precipitation cycle of approximately 27 days, and his latest report gives the preferred dates in the 379th cycle which began on January 10 of this year. Visitors to Washington may find it of interest to consider whether they should plan their visits so as to avoid the dates when rainfall may be excessive. A second table in this interesting report predicts the dates in each month when the temperature is likely to be lower than the general average. Abbot makes no reference to the political temperature, which, for most of 1952, is sure to be at or above the boiling point.

Not since our 45th class reunion has the Secretary had news of one of our three famous coeds who graduated in 1894. Mrs. P. F. Bonesteel, who will be more easily remembered as Sarah Abbie Hall, and who took her degree in Course VIII, along with Abbot and the late F. E. Fowle, now reports her address as 4427 North Kenneth Avenue, Chicago 30, Ill. Some of the Class will remember that soon after graduation Miss Hall married Frank Bonesteel, who had studied Architecture as one of the numerous "specials" in our Class, and who was popular and prominent in its affairs. Bonesteel died many years ago, and until recently his widow had been living at Victor, N.Y. It is pleasant to have news of this attractive lady member, to whom greetings are extended from her male classmates.

Once more the Class has suffered a loss in its original numbers. Morris Leidy Johnston registered from Chicago in the fall of 1890, but didn't return to the Institute after the first year. He later studied law and for many years was connected with the legal firm of Scott, MacLeish and Falk at 134 South La Salle Street, Chicago. The name of this firm was recently changed to MacLeish, Spray, Price and Underwood, and Johnston was apparently with the firm until his demise on March 8 of this year.

Before these notes reach the reader's eye, the Secretary will have done two more of the various odd jobs that seem to fall to his lot. At the end of April, the national meeting of the Society of Ameri-

can Bacteriologists meets in Boston, and as one of the original members, now emeritus, the Secretary has been dragged into preparing a brief paper on the rise of bacteriology in New England. This is part of a symposium of which he and Professor M. P. Horwood '16, now Professor of Sanitary Science, were asked to be the "Conveners." Before this convention ends, your busy Secretary will be in New Orleans for the annual meeting of the Refrigeration Research Foundation, and, as chairman of the Board of Governors, will participate in its doings. A few old students in New Orleans have already made arrangements to throw a dinner for "the old Prof." These things add joy to the life of a has-been teacher.

With sorrow the Secretary must now report the death of Sterling Green Cousins at Eureka, Calif., on April 19. Cousins was a student throughout the four years of our Class in the Course in Mechanical Engineering. He came from Fortuna, Calif., and will be remembered as a good student and a good companion, much liked by all his associates. On leaving the Institute in '94, he returned to California and by 1909 had established himself as an orange grower and an irrigation engineer in Cucamonga, in the heart of the orange- and grape-growing district east of Los Angeles. Here he was active for several years, but in 1915 he retired and for the next 15 or 20 years lived in Los Angeles. In 1935 he reported his residence as Salem, Ore., and after that lived for a time at Larkspur, Colo. Thereafter he removed to Eureka, Calif., where he made his home for the remainder of his career. His death was reported by his wife, to whom the sympathy of his surviving classmates is sincerely extended. It is not known to the Secretary whether he had children. Our memories of him are those of student days, as he never found it possible to attend the class reunions of later years. — SAMUEL C. PRESCOTT, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass.

• 1895 •

Your Secretary may have a license to delve into some of the class statistics, when one recalls that, for some reason or other, he was elected as the class statistician for the '95 Class Day exercises. Several mates have wanted to know the "score" of the present class membership: So here it is! The total enrollment of everyone connected with the Class during the years 1891–1895 was 443. This number is classified as 143 receiving their S.B. with the Class; 90 are dead and 53 living, or 37 per cent. There were 177 mates who had connections with the Class for terms from one to four years; 146 are dead and 31 living, or 17.5 per cent. There were 74 with the Class, whereabouts unknown, and 49 mates who eventually affiliated with other classes — '94, '96, '97, and '98. If we discount the unknown and those affiliated with other classes, we have a total of 320, of which 84 are living, or slightly over 26 per cent. If this does not satisfy the inquiry, please notify. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

Our report to the Class for this issue of The Review will be very brief, since very little material has come to hand. We can wish you all a well-planned summer holiday season. Fred and I are looking forward to May fishing at Moosehead Lake and shall hope to out-fish Mrs. Rockwell, who not only enjoys the sport but also brings in the big ones.

Our local group at this writing, April 20, can be reported in excellent health. Fred Damon is progressing well with his arthritic condition, and Partridge is still hanging on. Word from John Tilley is on the credit side and his clique is equally well. Let's make a real effort to come to the commencement exercises this year. We shall plan for a special class dinner if enough fellows show up. — In politics, let's find each man voting.

I regret to report the death of Merritt S. Wilcox, Course IV, in March, 1952. From a clipping sent to The Technology Review by his widow, the following information is given concerning his death: "Merritt Smith Wilcox, 79, 2136 Columbus-av, a member of one of Sandusky's [Ohio] earlier families and former department store operator here, died . . . in Good Samaritan Hospital following a prolonged illness of cancer. Mr. Wilcox was born September 3, 1873, the son of the late Rollin Merritt and Helen Smith Wilcox, was educated at Cornell University and . . . Technology.

"For many years he was associated with the R. M. and C. B. Wilcox Company, the department store, and later with the Equitable Life Assurance Society until ill health forced his retirement more than 20 years ago. In 1902 he married Jane Sprague Beecher, who survives. In addition there is a son, Richard M. Wilcox of Mountain Lakes, N.J.; a daughter, Mrs. Russell A. Ramsey of Sandusky; five grandchildren and a sister, Mrs. H. M. Orwig, St. Louis, Mo. The family has asked particularly that no flowers be sent. In preference, expressions of sympathy may be given to the Erie-co Unit of the American Cancer Society in care of Miss Katherine Graefe, secretary, or to the Good Samaritan Hospital Memorial Fund."

Mrs. Conrad Young wrote a note to your Secretary, dated April 21, from which we quote: "I want to write just a note to thank you and the Class of '96 for the Easter card and greetings. I know you will be glad to hear that I am much improved, although once in a while I still have the 'spells' of exhaustion — very unpleasant feelings. The heart specialist, Dr. Zaur, called a few days ago and was pleased to find me getting along so well. It is terrible to feel my precious Connie won't come back to me. I have had a hard time, and just cannot forget all he must have suffered mentally knowing he was liable to pass out any minute. He did not want me to know how sick he really was.

"On his way from the June celebration and after crossing the bridge over the canal, he lost his way home. Drove down to Brewster and asked where he was and how to get to Bass River. How fortunate he did not have a stroke en route. I worried all the time he was gone; I still feel

I should have been told of his condition. It would have been easier. Herman V. von Holst of Boca Raton, Fla., a '96 classmate, wrote a beautiful letter. He had not heard of Connie's death until I wrote last month. My best wishes to Mrs. Rockwell, and also to you. I have difficulty writing because of arthritis, so pardon the poor writing."

Our best wishes for a restful and happy summer for you all. — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, 275 Broadway, Arlington 74, Mass.

• 1897 •

A letter from William Binley, Course XIII, received in April, advised that he was about to leave with Mrs. Binley and a friend on an automobile trip to Mexico, expecting to spend about three weeks in Mexico. He has recently moved from Braintree, Mass., to Exeter, N.H., his residence in the latter city being at 156 High Street, far from the madding crowd, as William puts it. He is retired now after many years of service as naval architect at the shipbuilding plant of the Bethlehem Steel Company at Quincy, Mass.

Word has been received, without any details, of the death on January 9, 1952, in Plymouth, Mass., of Alfred R. Doten, Course II. Similarly we are advised, without date, of the death in Spokane, Wash., of Walter A. Gleason, Course I. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

• 1899 •

The May class notes contained a brief announcement of the death of Haven Sawyer. More information concerning his activities is now available through a clipping from the Portland, Maine, *Press-Herald*, of which the following is an excerpt: "He was the oldest living former captain of football and track teams at Bangor High School, where he excelled in athletics during his undergraduate days. Following his graduation from Technology he was sent west by Boston interests as a copper smelter consulting engineer and one time or another served in the mining field in Utah, Nevada, Idaho and California. He devoted the latter part of his life to his timber interests in Maine. He headed or was an official in many concerns and traveled extensively, delivering addresses on the feeding and sanitation of silver black foxes. He was a member of numerous organizations, among them the Maine Grange, and was chairman of the open highways commission during Senator Owen Brewster's administration as governor, experimenting and demonstrating the practicability of keeping Maine's highways open for winter motor travel. During World War II, Mr. Sawyer served as national resources consulting engineer to the senate investigating committee on the national defense program. He collected rare stamps and coins and early American farm implements and machinery. He also was an authority on rugs and antiques." — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND,

• 1900 •

George Crocker Gibbs, one of the best-known members of the Class of 1900, died suddenly on March 31, aged 74. He was best known to Technology Alumni because of his work in Paris during the first World War. Born in New Bedford, Mass., he entered M.I.T. with us and graduated from Course I in 1900. He followed a civil engineering career until 1908, working with the Brown Hoisting Machinery Company at Cleveland, Ohio, with the United Engineers Offices at Newport and in Boston. He then entered the Episcopal Theological School in Cambridge and graduated in 1911 with the degree of Bachelor of Divinity. He was ordained to the diaconate by Bishop Lawrence at St. Paul's Cathedral, Boston.

His first service was as a missionary in Okmulgee, Okla. In 1917 he resigned this charge and went to New York as assistant rector at St. Anne's Church in the Bronx. At the outbreak of the first World War, Gibbs was offered a chaplaincy in an engineer regiment but was rejected by the Adjutant General's Department on the ground that no more Episcopalian chaplains could be appointed at that time. Early in 1918 it was found necessary to appoint a new director for the Technology Bureau of the American University Union in Paris, France, and Gibbs was chosen for this position. This bureau was doing wonderful work for all Technology Alumni who were in France in connection with the War. Gibbs' success as director can best be told by a few extracts from the book, *Technology's War Record*: "The director, Mr. George C. Gibbs, [quoting from a letter written by a Tech man who had recently enjoyed the hospitality of the Bureau] is fast proving himself the ideal man for the place. His heartiness and the knack he has of making every Tech man that comes in a personal friend, is a rare quality and one that is appreciated by all. It is this personal touch which makes the Tech Bureau one of the strongest in the Union.

"The new director should be a man who would insure the continuance of a home-like atmosphere. Such a man was George Gibbs. Not only have hundreds testified in their letters from abroad to the love of Tech men for him, but many, fearing that adequate justice would not be done to his work, in sending in their war records neglected to put down any details of their own service but instead sent in notes requesting that the work of George Gibbs be given precedence over that of all other Tech men in France. He was a mature man, yet sympathetic with youth. Above all he was a friend. There are few men in the world today who can boast of as many fast friends. . . . Its [the Bureau's] success is due above all, to the ability, tact, and sympathy of George C. Gibbs."

After the War, George returned to Boston to become assistant rector of Trinity Church. In 1926 the urge to return to Paris became too great, and he accepted the position of canon-in-residence at the American cathedral there and served in that capacity until 1933. Several of his class-

mates visited him there, including your Secretary who attended a service at which he preached. In 1934 he became rector of the Church of Our Saviour in East Milton, Mass. His work there is summarized in the following statement made at the time of his resignation in 1939: "The announcement was received with intense regret by members of his congregation, to whom he has endeared himself during the five years of his rectorship by his zeal and indefatigable energy in building up the church membership and the various church societies." This resignation was caused by his decision to enter the monastic order of the Society of St. John the Evangelist. After his novitiate in Cambridge, Father Gibbs served in Caribou, Maine, Chicago, and finally in Boston. Impressive services were held for him in his church on Bowdoin Street, Boston, on April 3. Sheldon Graff of our Class attended these services, as did also the Secretary. — ELBERT G. ALLEN, Secretary, 11 Richfield Road, West Newton 65, Mass.

• 1901 •

It is unfortunate that notes which are written in April do not reach you until June so that news which comes fresh to me is rather ancient when it reaches you. The delay is due, of course, to the time necessary to make up, print, and distribute the magazine. I have so much interesting news in the class letter responses that some of it will have to go over till next fall. However, I believe that most of you enjoy reading of your classmates' doings whenever they appear.

I have been notified by the Alumni Office of the death of Frank W. Green, XI, in Winter Park, Fla., on February 16. He had retired but I have no other information. Al Higgins sent me a news clipping telling of the death of Chester Chubb on February 9: "Chester N. Chubb, 74, who retired as president of the United Light and Railways Company in 1949, died February 9 at San Antonio, Texas. Chubb entered the utility field in 1902. He held various positions with a number of companies in various parts of the country. In 1948 he was elected president of the United Light and Railways Company and its subsidiary, Continental Gas and Electric Corporation. At the time of his death he was chairman of the board of United Light and Railways."

For the benefit of those who did not attend the 50th reunion at Oyster Harbors, I am going to quote extracts from a letter sent by Everett Marsh of Port Republic, Md., to those who were at the reunion. With it was sent a very cute snapshot of a cat named Felix Marsh, Gent. I quote: "Member of '01 Class, M.I.T., Dear Sir: This is Felix speaking. When my master returned from the reunion in June it was apparent that he had enjoyed meeting you again after so many years and he suggested that I send you one of my photographs as a token of his pleasure on the occasion. Master and I spend most of our time at the cottage, 1368 at Scientists Cliffs, near Port Republic, Calvert County, Md., just 50 miles from where we live in Washington, at 630 F Street, N.E. Occasionally Master goes to the city to attend to business and I tag along, as I otherwise might

go hungry since you can't always find field mice when you want them. I think my auto traveling must add up to 5,000 miles by now. I love to spend much of my time on the roof of the cottage, at least when the sun is out, near the weather vane, anemometer, and thermometer. To get up there I climb a tree and then jump five feet over on to the roof. Master dubs me the 'Superintendent of the Weather Department.' Perhaps you'll be driving through Washington sometime and possibly you can take time to drop in at 1368 and call on us. You and Master would have a grand time in visiting, in recalling the days spent with Tyler, Cross, Arlo, 'Freehand,' Getty, and many others. I'd take you into the lounge and show you our gadgets, gimmicks, foibles, and tops. Master would make some young thunderbolts for you and display divers electrical stunts that I don't understand any too clearly. Master frequently says to me 'Felix don't talk so much.' I think that's what he's about to say now so I'll beat him to it. Good-by, Felix."

Now for some of the class letter replies. D. A. Kohr, V, from Dayton, Ohio: "I still head up the Lowe Brothers (paint) Company, but have an executive vice-president to do most of the work I formerly did. A fine arrangement as long as it can last. I will be 75 next month." Austin Hyde from Virginia: "Retired, but acting as part-time consultant." Sumner Hazlewood in Maine says: "Retired. Fixing leaks in water pipes, repairing broken chair legs, explaining to my wife why I can't repair various other things, then repairing them when she convinces me we can't afford to have them done. Hanging out the clothes she washes and wearing them out after she irons them. Taking care to be prompt at mealtime and having other engagements immediately afterward (while she washes the dishes). Consuming four kinds of medicine and vitamins prescribed by my doctor who tells me I am too fat, although I have lost 50 pounds on the diet he ordered."

Warren Chapman, VI, Groton, Conn., has retired and spends his time eating, smoking, some walking, and sleeping. Is in fine physical condition except for his eyes. He sees through about half of one only. I reported on Wilford DeBerard, XI, of Chicago a short time ago as to his work for the city of Chicago. He adds the following in his class reply: "Personally, to keep busy and have a hobby, I add my bass to a SPEBSQSA [Society for the Preservation and Encouragement of Barber Shop Quartet Singing in America, Inc.] chorus which puts on barbershop programs two or three times a year. To help me keep in tune, my friends recently presented me with a piano, around which many a barbershop swiper has learned new nuances and near-harmony chords. A citation from Northwestern University for 'outstanding performance of service in the production of safe and potable water' was presented to me last fall at appropriate ceremonies at the university. Other kudos are honorary memberships in the Chicago Engineers Club, American Society of Civil Engineers, and, not too long ago, in the Federation of Sewage and Industrial Wastes Associations (for being treasurer since it was founded)." Charles

Bittinger, whom we know has retired, says that he is falling apart—mentally and physically. (?)

Your Secretary, who has for a number of years been the class representative on the Alumni Council, has resigned because of his great difficulty in getting to council meetings from New Hampshire. The job has been turned over to Willard Dow who, as Assistant Secretary, ought to do something to earn his salary anyway. — THEODORE H. TAFT, *Secretary*, East Jaffrey, N.H. WILLARD W. DOW, *Assistant Secretary*, 287 Oakland Street, Wellesley Hills 82, Mass.

• 1903 •

Further evidence of the "little '03" reunion in Florida last February was received from Tom Sears, in the shape of snapshots of the group. Lounsbury, Regestein, Reed, Hewitt Crosby, and Tom look hale and hearty; and Tom comments that by spending the cold months in Florida they will prolong their lives. Lounsbury drove all the way across from the West Coast to be there. The others were staying near where they met. We shall preserve the pictures in the class scrapbook for exhibition in June, 1953. A newspaper item from the *Milford Independent* gives a story of George H. Donham, who took special courses for two years with us, as having had only 17 birthdays in his 72 years, his birthday being the 29th of February. He has been living on and working a farm in West Upton, Mass., for the past 36 years, after teaching manual training and forging in various schools and colleges.

The class letter was mailed this week and we trust every member of the Class received one. Now we shall look for many replies between now and next June. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1905 •

I am writing these notes on the good ship *Antinous* of the Waterman Line out in the middle of the Gulf of Mexico, out of Tampa and en route to Mobile, Ala., and accompanied by the good wife, whose physician ordered a trip on a cargo ship as the maximum of relaxation. We're en route to Boston and it's one of those mysteries of steamship schedules that we have to sail northwest from Tampa to get to New York, as there is no other passenger service from Florida up the Atlantic Coast except via Tampa, which gives us a few days extra relaxation.

Speaking of steamship travel, a letter from Frank Payne, XIII, tells of a Pacific trip. It is so well written that I quote: "I have a piece of news. After 47 years since leaving Technology, I met my old friend Bruce Hill in the middle of the Pacific on the S.S. *Lurline*. My wife was in her deck chair talking with a lady from Pittsburgh. After the conversation had progressed for a half hour, my wife said that there was just one person she knew in Pittsburgh who went to school with her at Painesville, Ohio. The name was Agnes Dempster. The woman turned pale and said to Mrs. Payne: 'Agnes Dempster was my best friend and we were inseparable.' That

was one shot out of a million, but the funny thing was that Agnes Dempster married E. Bruce Hill, according to this lady; and when I heard the story I said to my wife: 'I think I know E. Bruce Hill. I played football with him in the Class of 1905 and I shall recognize him if I see him.' A few minutes later, Bruce came up on deck and I recognized him immediately as our class hero. He didn't know me from a hole in the ground but we soon got acquainted when I told him that he was a tough baby as captain of our football team and he laughed and a gentleman in his party yelled at me, 'and he is still a tough baby.' Incidentally, that gentleman turned out to be Irving Olds, chairman of the U.S. Steel Corporation, a warm friend of Bruce's family. You can see from this the kind of people that Bruce travels with. I can't tell you how nice it was to meet an old friend of 1905. Bruce tells me he is retired. That may be all right for him, but it doesn't interest me even at this stage of the game. I thought this meeting was quite interesting. I don't think Bruce Hill will ever report it. Nevertheless, I can say he looks fine and has only a few gray hairs showing. Had a fine visit in Honolulu and the S.S. *Lurline* is the sweetest ship that I ever took passage on. I am feeling fine."

Another traveler, Clarke Warren, II, tells of a trip he and his wife took to Red Bluff, Calif., to witness a ceremony wherein their son, 37 years old, took the vows of deacon of the Episcopal Church, from which position he expects to be elevated to the priesthood next fall. Clarke says his son was doing quite well in the lumber business, but all along has felt a call to serve humanity on a higher plane.

Bob Adams, I, (C. Robert) answers an appeal for news as follows: "Fortunately for me, I am still going strong. While I have retired from active participation in business, I still find many things to do. I enjoy playing golf several times a week at my country club. My wife and I have had dancing as a hobby for over 20 years. We win many contests in the rumba, samba, tango, and the newest, the mambo. My wife and I both paint in oils and have taken numerous art courses together at the California Arts and Crafts, University of California, and Mills College. For the past three years we have attended summer school there, having the rare opportunity to study with such masters as Kuniyoshi, Max Beckmann, and William Gaw. Sometimes I take an interest in our garden. Though we live in town, we have a spacious garden filled with rare specimens of shrubs and flowers. My wife is a member of the Piedmont Garden Club and is considered as quite a horticulturist. My only child, a daughter, has two very smart and attractive little girls, aged six and nine. I am looking forward to attending the 50th anniversary of the Class. I would suggest some place for the reunion where it would be pleasant and gay at that time of the year. It should be held where good accommodations could be provided for such a gala event. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. SIDNEY T. STRICKLAND, *Assistant Secretary*, 69 Newbury Street, Boston 16, Mass.

• 1906 •

The *Berkshire Eagle* of Pittsfield, Mass., includes a column headed "Our Berkshires" by Clarence A. Crandall. In the issue of March 6, the author referred to his column in a previous issue in which he had occasion to mention the first Irishman to locate in the nearby town of New Marlboro in 1839. His name was Timothy Wrinkle. This reference promoted a letter from Wrinkle's great-grandson, John Timothy Wrinkle '06, who stated the fact that any immigrants to Berkshire County from Ireland came because they had learned the trade of papermaking in Dublin, and when it was found that the water supply and climate of the Berkshires were favorable to the manufacture of fine paper, they were attracted by the new paper mills built at Lee, Dalton, and so on. Our classmate is listed as an architect and engineer at West Springfield, Mass.

The Secretary had occasion to make a trip to Portsmouth, N.H., early in April, and on his way he stopped to call on Fred Batchelder at Hampton Beach but found the house closed. A neighbor advised that Fred was in St. Petersburg for the winter. Fred should be added to the list of classmates who went to Florida this season. In that connection, address changes have come through which indicate that Ralph Patch returned about the first of April and Abe Sherman got back to Rochester about March 20.

Under the organization for the Alumni Fund, each class has had a class agent. Henry Darling has served in this capacity since the position was established. As readers will recall, Henry has now retired from his position with the New England Telephone and Telegraph Company and makes his year-round residence in Wiscasset, Maine. Henry has advised the Secretary that he would like to be relieved of his duties as agent as he feels that someone in Boston or vicinity would be in a better position to handle the job. This fact has been reported to President Coes and he is now in the process of selecting another agent. Classmates should appreciate the work which Henry did while he held the job, as statistics indicate that the Class made a very good showing, thanks to Henry's efforts.

Notice has been received of the death of two classmates: Laurance M. Buck, III, who passed away November 23, 1950, and Everett S. Cason, VI, who died on October 21, 1951. The Secretary's records, which go back to 1913, show that Buck had always been connected with the glass-manufacturing business in Baltimore, Md. The record for Cason shows he had been located in Chicago or vicinity since 1935. At the time of his death he was living in Evanston, Ill. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills 82, Mass.

• 1907 •

In the latter part of March, I received a letter dated in São Paulo, Brazil, on March 22 from Harry Moody, which reads in part as follows: "I imagine you will be surprised at a letter from me from Brazil. As I believe I have told you before, my son

(M.I.T. '34) is one of the top executives with Ford Motor Company Exports and is presently on an assignment at their plant in Brazil, so his mother and I are here for a visit with him. Being very much in love with the water, we left New York on February 21 on the Moore-McCormack Liner, *Uruguay*, arriving here March 7. There is a large English-speaking colony here, and we have met many interesting people, both Brazilians and Americans, by whom we are being royally entertained. Most of them are connected with the Ford Motor Company. Without a doubt, Brazil has wonderful possibilities of development, which in one sense has only started. São Paulo is an industrial city of 2,500,000 people and growing by leaps and bounds. Its elevation is about 2,500 feet, so although the days just now are hot, as it is still summer here, the nights cool off so that we sleep under blankets. Rio is a most interesting city, having what is considered the most beautiful harbor in the world. We were there a few days and probably will stop there again on the way home. We plan to get back to Lexington, Mass., early in June, so I am hoping to see you at our class reunion."

Phelps N. Swett will retire from his active professorship at Middlebury College, Middlebury, Vt., at the close of the current academic year and will become professor emeritus. Phelps went to Middlebury in 1909 as an assistant professor of mathematics. In 1911 he became assistant professor of engineering, and in 1918 was promoted to the rank of professor. During recent years he has been professor of geography and surveying. During 1925-1926, he was president of the Vermont Society of Engineers, and in 1925 he received a master of arts degree from Clark University. He has been a director of the National Bank of Middlebury since 1919 and its president since 1935.

Through the M.I.T. Alumni Office, I recently learned of the death of our classmate, Albert S. Hamilton, which occurred on December 26, 1948. Albert was associated with our Class in the Course in Physics, but he did not graduate, and I have never received any information as to his activities since 1907. His most recent address, according to my records, was 18 Imlay Street, Hartford, Conn. — On January 2, 1952, Percy J. Colvin died suddenly, according to a note received from his widow under date of March 28. Percy took the Course in Architecture but never actively followed this profession. For many years he was proprietor of a concern known as Grey Iron Foundry in Worcester, Mass., and then, for a period of time, was a salesman of securities for F. L. Putnam and Company with offices in Worcester and Boston. During recent years he has been associated with the firm, Coghlin's, Inc., dealers in electrical supplies in Worcester. He is survived by his wife, whose address is 24 Fruit Street, Worcester, Mass.

At the time that you are reading these notes, it will be only a matter of days before our 45-year reunion begins at Oyster Harbors Club, Osterville, Mass., on the afternoon of June 20. You have no doubt already received from me a complete announcement regarding this event to which we have been looking forward for several years, and without doubt many of you

have already returned to me the necessary reply sheet together with your check covering the cost of your attendance at this gathering. If any of you are still undecided as to whether or not you will be with us, I extend to you, both personally and on behalf of our Class, my most sincere and urgent invitation to be with us at this delightful spot on Cape Cod, Mass., to share with a fine group of your classmates the complete enjoyment and recreation which are afforded by this occasion. If by chance you are thinking to yourself that you have never attended one of our reunions and that you will not feel very much at home at this one if you should come, please take my word for it that you will receive the most cordial welcome possible from myself and from all of the other men who will be present and that you will be completely received into the warm fellowship of all of our men within a few minutes after you arrive. As Phil Walker, our Class Treasurer, said in his letter sent to you early in April, "There will never be another '07 45-year reunion." Hence, if you have not already done so, won't you please fill in the reply sheet which you already have, write your check, and mail both of these papers to me in the envelope which I have previously sent to you? — BRYANT NICHOLS, Secretary, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, Assistant Secretary, 18 Summit Street, Whitinsville, Mass.

• 1911 •

As promised in last month's notes, here is a letter from Bob Haslam, X, concerning his South American trip late last winter: "Since retiring from Standard Oil of New Jersey, I have been doing some consulting work for W. R. Grace and Company and am on the W. R. Grace Board. They have very large industrial interests on the west coast of South America and they have been giving consideration recently to expanding on the east coast of South America, particularly in Brazil. Consequently, I went to South America to look into the possibility of their establishing some small chemical businesses in that country. The trip down and back by boat was extremely pleasant.

"However, while down there it became necessary for me to fly back to New York for a special meeting and this meant flying for four nights and two days in one week, which is a little strenuous. Also, we lost one motor about 300 miles from land and had to limp into an unscheduled stop at Bermuda. Coming back on the boat, I ran across P. T. Redfern '12, sales manager of Byers Machine Company, Ravenna, Ohio, who unfortunately had lost his wife on the S.S. *Brazil* going south, so that he was returning with us on the S.S. *Argentina* coming north. It was most unfortunate, and Redfern had the deepest sympathy of all passengers.

"In answer to your question regarding mail: The office at 100 Park Avenue, New York, is that of the U.S. Pipeline, of which I am president. My office with the Grace Company is Room 411, New York Cotton Exchange Building, 60 Beaver Street, New York."

Johnny Scoville, IV, thoughtfully sent me a clipping from the *New York Journal-American* of April 4, showing Dick Gould,

XI, director of sewage disposal, Department of Public Works, city of New York, with other officials at the opening of the new sewage-disposal plant for which he is responsible. The subcaptions on the two pictures tell the story: "Owls Head Opening — Mayor Impelleri and Borough President Cashmore open the massive valves at the Owls Head Sewerage Disposal Plant to start operations at the \$21,000,000 Brooklyn project. On hand for the formal opening of the purification plant are Richard H. Gould, director of Sewage Disposal; Frederick H. Zurmuhler, Commissioner of Public Works; the mayor, Cashmore, and Cornelius Hall, borough president of Richmond." And: "Boon To Beaches — Water pours into the huge tanks where it is aerated, one of the steps in the purifying process. The modern Owls Head plant will eliminate the daily dumping of some 120,000,000 gallons of raw sewage into New York harbor, greatly enhancing the ocean-front bathing waters at Coney Island and other beaches."

Admiral and Mrs. Luis deFlores, II, opened their Pomfret, Conn., home in early April for a two-day public showing of the recently completed "Stations of the Cross," by J. Gregory Wiggins of Pomfret, woodcarver to Trinity College. The exhibition was sponsored by members of the Women's Board for the benefit of Day Kimball Hospital. Designed and executed for the Protestant Episcopal Church of the Advent in Boston, the Stations are carved in relief in basswood. They are painted in vivid colors within an arched framework of black and gold, giving the effect of Gothic stained-glass windows.

In order to provide for their expanding staff, Paul Kellogg, IX, announced that on April 15 his firm — Stevenson and Kellogg, Ltd., consulting management engineers — is now located in its own building at 4123 Sherbrooke Street, West (corner of Elm), Westmount, Montreal 6, P.Q., Canada. The firm also has offices in Toronto, Ontario, and Vancouver, B.C. Paul wrote: "The enclosed announcement gives me a chance to write you, with greetings, so that you will know that Canada is still on the map. We are quite pleased at this latest move because, for the first time after nearly 17 years in Canada, we are going into our own building. I am one of your classmates who is all for having an interim meeting before our next five-year gathering. I think I want this particularly because, as you know, I had to miss the last one as it was during my honeymoon. Otherwise, I surely would have been there."

Was very amused recently at a stamp on the back of a letter from Nat Seeley, II, enclosing his subscription to the Alumni Fund. The stamp depicts a man and his wife and tiny boy emerging from the U.S. Treasury, each clothed in a barrel. The man's barrel bears the caption: "It's no joke, I'm broke!" Nat and Louise are all for an interim get-together — say in June, 1953 — as are Charlie McManus, I, and his wife, Elinor, who are Bostonians. How about *your* ideas? Write to Dennie.

At 4:00 P.M. on Easter evening, in the First Congregational Church at Ashburnham, Mass., Sally Knight Quincy, daughter of Mr. and Mrs. Knight Quincy of that town, and Stanford H. Hartshorn, Jr., '49,

son of Jule and the late Stan Hartshorn of Gardner, were married. Miss Quincy received her bachelor of arts degree from Skidmore College in 1951 and has been employed as a laboratory technician at Massachusetts General Hospital, Boston. Young Stan, a Navy veteran of World War II, after graduating from Gardner High School in 1944, attended M.I.T. for two years, transferring to the University of Michigan where he received a B.S. degree in 1949 and his master's degree in wood technology in 1950. His fraternity is Sigma Alpha Epsilon and last fall he succeeded his father as treasurer of C. H. Hartshorn, Inc., baby carriage and furniture manufacturers here in Gardner. Upon return from a wedding trip to Bermuda, the junior Eleveners will make their home at 17 Glazier Street here in Gardner, planning to be at home after May 1. Best wishes to you both from all Eleveners!

Let's all of us give heed to letters we received from Dr. Karl T. Compton, chairman of the Corporation, in which he urges Alumni to consider "the opportunity for constructive giving which would result from making the Institute a beneficiary in your will, if that can be done without impairing the future security of your family." The enclosed booklet, *Gifts by Will*, gives a forthright presentation of the needs of the Institute to "assure continued progress and outstanding service to young people and to our country for years and years to come."

See you at the 1952 Alumni Day at M.I.T. and at the Statler in Boston on Monday, June 9. — ORVILLE B. DENISON, Secretary, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, Assistant Secretary, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

Albion Davis, in addition to acting as chairman of our reunion, has just been sworn in as regional accounting officer for the Office of Price Administration. Albion also rates as a senior on the staff of Sewell, Wellington and Company and as a chapter member of the Boston chapter of the National Association of Cost Accountants.

Johnny Noyes writes from Dallas that while in Los Angeles attending a petroleum geologists meeting, he had dinner with Henry Babcock and Bill Lynch. He also had the pleasure of hearing Professor Schell as the principal speaker at a meeting of the M.I.T. Club of Southern California. At the dinner there was another 1912 couple, Mr. and Mrs. W. V. Schmiedeke. Professor Schell was the principal speaker at the Boston Stein Club at their March 12th meeting. His subject was "New Frontiers of Industrial Management." Hope we can get a synopsis of this on the Cape in June.

Have just received a book review on Bill Rhodes' latest publication, *Humanology*, "A Doctrine of Truth and Simplicity." I quote: "On the whole, *Humanology* seeks to point out the techniques of sound commercial development as a practicable, civilizing measure for increasing production and distribution with less human effort and wastage. Descriptive of the world of people in motion with its ramifications and opportunities, this book has general educational value; but it may be more

useful to policy makers and executives in business and government. The present edition is a preliminary one, mimeographed on 8½ x 11 pages, but designed for readability and bound."

A note from Dave Benbow of Reading, Pa., in reply to a note from me urging him to be with us on the Cape, states that he is extremely busy on the road trying to find out why more cigars are not being sold. I presume he refers to the well-known Y-B brand manufactured by Yocum Brothers. I am urging him to bring a good supply down to the Cape as samples, as I am sure he will find plenty of smokers there. — FREDERICK J. SHEPARD, JR., Secretary, 31 Chestnut Street, Boston 8, Mass. LESTER M. WHITE, Assistant Secretary, 4520 Lewiston Road, Niagara Falls, N.Y.

• 1914 •

The date and place for the 40th reunion has been set. We will return to the Sheldon House at Pine Orchard, near New Haven, Conn., and the dates are, June 18, 19, and 20, 1954. Although this reunion is two years away, be sure to mark your calendar now so you may be certain to have the date reserved. Charlie Fiske is arranging to have the reunion committee set up early, and by this fall we will be ready for business. Your Secretary desires to place his entry in the grandfather contest, but his rating is still low. A new grandson arrived in his son's family in April. This makes a total of two grandsons and one granddaughter between his son's and his daughter's families, but there are hopes for more.

Alden Waitt and his wife took a six-week auto trip into Mexico during March and April, visiting numerous well-known spots including Mexico City. After repeated airplane flights around the world during War days, this leisurely method of travel must seem like real relaxation to Alden.

Your Secretary was recently in New York to attend a meeting of a research group, and, on arriving, found that our loyal classmate, Ray Dinsmore, was also attending the same meeting. After the meeting was over, Ray and your Secretary had lunch together and a good chance to review '14 affairs, including the coming reunion. Later, en route to the train, your Secretary stopped in to see Ross Dickson, only to find him dictating a letter to your Secretary about Dinsmore. Ross had just seen an article regarding Ray in the New York *Herald-Tribune*. It read as follows: "A tire designed to give as much as 42 per cent more non-skid mileage than the standard one of today and a new safety tube giving complete protection against both punctures and blowouts were announced here today by Goodyear Tire and Rubber Co. Dr. R. P. Dinsmore, vice-president in charge of Goodyear's research and development activities, said the new tire is of all-nylon cord, with sidewalls of natural rubber and tread of cold synthetic rubber. The tire has 26 per cent more non-skid tread thickness than the usual tires, he said. The tube contains a puncture sealant compound used also in the tire."

It seems only the other day that the principal items of these notes told of the postwar locations of our classmates as they returned from World War I. Soon, the predominant item was that of marriages

and the raising of families. Today, we have already entered into the period when notices of retirement and of the death of classmates appear in nearly every issue. It was with a tremendous shock that the death of Louis A. Wilson from a heart attack, which struck without warning, was reported as having taken place on March 15. Lou had always been one of the very active members of the Class, and was a regular attendant at the reunions. Ed Flynn '19, who was associated with Lou at the New Jersey Zinc Company of Palmerston, Pa., has kindly supplied considerable information regarding him.

Although born in Pawtucket, R. I., Lou grew up in the Boston area, and prepared for the Institute at Mechanics Art High School. He was married on April 10, 1917, to Selma J. Jackson, of Pawtucket, who survives him together with two sons and four daughters. The two sons are graduates of the Institute. Three of the daughters have already graduated from college, and the fourth is at Connecticut College for Women. The industrial association of Wilson was with the New Jersey Zinc Company, where he held various technical positions, his final one being technical assistant to the general manager. Besides his industrial activity, Lou was interested in many other things. At the Institute, he was on the varsity track team for three years, and was the fastest runner at the Institute in 1913. His interest in outside activities carried on through his later years. For 35 years, he taught a boys' class in the Sunday school of St. John's Episcopal Church, where he was also a vestryman and, later, junior warden, giving generously of his time. Many civic matters also received his attention, particularly in connection with work in his community during the last war. For this work, the American Legion awarded him their Citation of Merit. When the M.I.T. Club of Lehigh Valley was formed, Lou was one of the founders. He later served as the president and took a very active part in the 1950 Development Fund campaign.

Word has also been received of the death of Palmer St. Clair, Jr., of Cincinnati, Ohio, on August 11, 1951. As St. Clair's association with the Class was in graduate work only, he did not take an active part in the affairs of the Class. His whole life after graduation was with chemical and pharmaceutical industries. His most recent service was with the Industrial and Chemical Division of Ebasco Services, Inc. — H. B. RICHMOND, Secretary, General Radio Company, 275 Massachusetts Avenue, Cambridge 39, Mass. ROSS H. DICKSON, Assistant Secretary, 126 Morris-town Road, Elizabeth, N.J.

• 1916 •

Again, your fine co-operation has made it a real pleasure to submit our monthly column. Our first letter is from Melville Rood and indicates that he is a very busy man, although not too busy to drop us a line. He writes: "My daughter, Laura Jean, who is Girl Scout Executive in Waltham, is active in Eastern Star work and this month was elected associate matron, Palestine No. 114, Order of the Eastern Star, Newtonville; so now I am associate patron and will be busy in this work for the next two years. Now I will have to decide what

to cut out so as to provide the necessary time for O.E.S. I am still plugging away at Arthur D. Little, Inc. My eldest son, M. H. R., Jr., is now in the Chemical Research Laboratory of Metal Hydrides at Beverly, but still lives near me here in Arlington and commutes over the new Route 128. He has one daughter, Karen, two years old last November. Hadley, my other son, graduated last year from Marietta College with a degree in business administration and is working as junior accountant with Spark, Mann and Company, 60 State Street, Boston, while he is studying up for a Certified Public Accountant's examination. He is in Naval Air Force Reserve and goes to Squantum two days a month. Last Saturday evening the Marietta College Club of New England held its annual meeting in Newton, and Hadley Rood was elected president for the coming year. Sunday our family clan met in Marblehead to celebrate the combined birthdays (one last week, one this week) of my two grandnieces of Melrose who, with their mother, expect to go to Germany in June to be with their father who is a lieutenant in the Air Force there. Tonight I was home and the family played canasta. Tuesday evening Mrs. Rood and I will attend supper and lecture at club rooms of Appalachian Mountain Club; Wednesday evening, dinner at Russell Lodge, A.F. and A.M.; Thursday evening, meeting of Northeastern Section of American Chemical Society; Friday evening, the installation of Arlington Chapter of DeMolay; Saturday, unscheduled so far but usually a busy day. I think I have mentioned before my interest in genealogy. I spent much of my spare time in the thirties tracing out lines to original immigrants and was able to trace to about 150 immigrants of my line and my wife's line. Now, one of my distant cousins in Wisconsin is writing a history of the Rood family and is holding me responsible for my branch, from my Revolutionary ancestor, Elijah Rood, born in 1748 in Canaan, Conn., and all his descendants down to the present time. I have considerable data which has been handed down through the family but there is much more missing than what I have. Where I have done most of my previous tracing going backwards to ancestors, I find it a little difficult to reorient myself to tracing from ancestor to descendants. Reunion this year sounds good if I am not at Marietta at that time.

Kem Dean writes that everything is fine, that he has two grandchildren now and a third due in May. In reference to the June reunion, he said that it was too early for him to make plans for the summer, but . . . "Hope to get to Boston some time in June." Allen Pettee pleased us very much with this letter: "I see by the February Review that in sheer word tonnage, 1916 yields to no class and I suppose that is good; but it's a stiff pace for a long race, as your stout appeal of February 26 implies. In self-defense against your soft impeachment, I hasten to mention that a Yale class secretary also dogs my footsteps for lineage, and I am only grateful that the gratis Harvard degree of 1916 did not put me on a third class secretary's mailing list, much as I

respect the tribe individually.

"Referring to your February column, I was also pleased to read Blythe Stason's message, though I can't tell from it whether he regrets having switched from engineering to law. He is very vague on that point, but he seems to have done all right by himself. I remember that Blythe was the only man in our structure theory section who could define concisely and precisely an 'influence' line. From this and other similar evidence it was a great loss to engineering when he deserted us for the law. You ask my opinion as to a 36th reunion in June. Since I have always heretofore had to beg off because of a regularly conflicting Yale reunion, I can be consistent only by boosting your idea for a 36th. I will put the dates down and will make every effort to get there if the affair should eventuate. To lighten your dead-tonnage load, I will consolidate my business history, beginning with my job as Chicago district engineer for General Cable Corporation. Transferred East in 1943, I successively became technical superintendent at our Bayonne plant, assistant chief engineer, chief engineer, director of research, and vice-president in charge of product engineering. Late in 1950, I was transferred to a new field, as vice-president and director of quality certification.

"I am getting a great lift in this new job, which basically means helping to raise the product quality level of a good-sized corporation, with six plants—something that borders on the idealistic. In addition, it has, of course, a dollar aspect because the program is concentrated on the reduction of scrap, reworking material, material waste, customers claims, and inspection cost, as well as stimulation of customer acceptance. Part of the job is plain old-fashioned inspection, but woven into it are the modern statistical quality-control techniques which are fast becoming as much a part of modern production methods as process time study. When I took over this job, I hastened to consult Harold Dodge, who needs no advertising, of course, as one of the leaders in the field of statistical acceptance of production. He was very helpful in setting my feet in the right paths (statistically, of course). Brief statistics covering production on the human side disclose a daughter, Barbara (Mrs. Edward B. Kovar), who has a son Richard, nine months old, my only grandchild. Daniel, my older son, lost considerable time fighting and convalescing during World War II, but has finished his pre-medical course at Yale, and is in his first year at Columbia College of Physicians and Surgeons. James, the younger, took his B.A. at N.Y.U. and is currently taking graduate work there. The children seem to be preparing thoroughly to take care of their parents' ultimate mental and physical ills. Barbara took a Smith master's degree in psychiatric social service; Dan majored in psychology in his pre-med work; and Jim is working for a master's in psychology. If we go off the beam, they should be understanding, at least.

"My wife, Helen, and I have done the usual community things. She has recently been vice-president of the New Jersey State League of Women Voters, I have

been president of our church Board of Trustees, and so on. As we approach retirement, we are looking over the United States for 'the' spot, having sampled (on a very nonstatistical basis) New England, New Jersey, Virginia, North Carolina, Florida, Colorado, and California. At the moment, having just spent three weeks in California, we favor the area just through the tunnel back of Oakland and Berkeley. One reason you are getting this is that a vicious cold has me fuming at home, and another is that if I weren't doing this I should have to be working on my income-tax return. Which gives you more tonnage than your column can probably stand from one shipper." Perhaps this would be a good opportunity to say that we are ready, willing, and able to accept similar "shipments" from any or all in the future.

We had another letter from Bill Howard telling us that everything is fine with him and that he is looking forward to a lot of fishing and camping out now that the good weather is making its appearance around Walla Walla. A news item in the New Orleans, La., *States* tells us that Chuck Loomis was recently elected to the board of directors of the Bemis Brothers Bag Company, and further stated: "Loomis has been with the company for the past 36 years, and was named vice-president and director of personnel in 1947. He began as a clerk in the Bemis office at Boston after his graduation from . . . Technology." Our hearty congratulations to you, Chuck.

Both Theron Curtis and Hen Shepard sent us an article which recently appeared in the International Trade section of the Boston Sunday *Herald* and which was written by Ed Barry. Ed, who is president of the Pierce Consulting Engineering Company of Boston, listed some very interesting points in his article, entitled "Modern Trends in Industrial Plant Design," and we are taking the liberty of quoting a few of his statements: "A marked difference is evident between the type of industrial plants constructed fifty years ago and those built during the last ten years. . . . The modern industrial plant is attractive in external appearance of walls, and the absence of noticeable fumes, odors, and waste liquids. Even the smoke stacks are clear. Formerly, a plume of black smoke from the chimney was a sign of industrial activity. Nowadays, it is evidence of faulty design or inefficient operation. . . . The use of natural gas and fuel oil in plants so situated as to make it economical to burn these fuels in place of coal, gives such plants a great advantage, since it frees them from the necessity of using cumbersome equipment for handling coal and ashes. . . . Automatic controls now lighten the task of operators and reduce the number of men in the power plant. Improved instrumentation has not only contributed to the maintenance of higher sustained efficiency, but serves to warn the operators of incipient troubles, which can be corrected before they become serious. . . . The generation and use of steam at high pressures and temperatures, especially in plants using large quantities of low pressure steam in their processes, have made it possible for such plants to generate electric power at a cost less than that of

public utilities. . . . The amount of low cost 'by-product' power which can be generated depends on the quantity and the lower the pressure, the greater the amount of 'by-product' power. Pulp and paper mills, many types of textile plants, bleacheries, chemical plants and many other process industries are in a position to generate their own power at low cost, since a large proportion of, and often their entire, power requirements can be a 'by-product' of their process steam consumption."

Ed Weissbach sent us a clipping from the February, 1952, issue of *Plant Engineering* which called attention to the formation of a new club in the Chicago area, "Plant Engineers of the Calumet Region," and the election of its officers, among whom is our own Edgar Hanford who was elected president of this group. Edgar appeared in the picture which accompanied this article, and this prompted Ed Weissbach to comment that our esteemed classmate seems to have put on a little weight. We wrote and asked Edgar if this were so and he sent us this letter: "It was nice to hear from a classmate and indirectly from Ed Weissbach whom I don't recall seeing since 1916. The biggest kick I get out of this national publicity is in hearing from old friends. However, the things you are proudest of never get into the papers, and I am now laying claim to the youngest class baby. Emory Kemp was the author of the oldest class baby, as I recall. I have four daughters — oldest is 25 and the youngest is two, and I also have two grandsons." Does anyone want to dispute Edgar's claim for fame?

Edgar also recently sent us a clipping which appeared in the Chicago *Daily News* carrying an article by Joey Connolly. A few days later Joey sent us a letter and also enclosed the same clipping. First, we will quote his letter: "Enclosed is an item that was published in the Chicago *Daily News* a week ago. It is one of a series this paper is publishing during Lent, all written by laymen. Recently the Chicago Mountaineering Club honored me by electing me vice-president for the current year. Unexpectedly, I ran across Raymond Blakney of our Class about two weeks ago. He has returned from missionary work in China as a result of the Reds' interference with such activity and has taken over the presidency of Olivet College, Olivet, Mich." Now we quote the clipping: "Christ was sought after because of His healing and teaching, and also because He was a pleasant companion. Adults and children alike wanted to be with Him. Most of the time He must have been happy though He also had times of sadness. He was happy because He was constantly doing something to benefit others and His followers today find happiness when they try to do likewise. The Christian religion is a means of tapping God's great powerhouse, of grasping something above and beyond ourselves to help us find the happiness everyone hopes to have. It is a means of pushing aside from our souls the things that cause fear and worry and it permits us to relate ourselves directly to our Creator. Religion is a stimulus to live every day in such a way that the people around us are benefited. It makes it easier for us to do what is right.

Religion affords us a means of influencing for good generations to come, thus helping to safeguard the future of our beloved country. It enables us to pass on to our children the heritage of all the best received from past generations and to add our own small contribution to this great heritage. My religion means happiness in this world and in the next, through daily striving to follow the example and teaching of Jesus Christ." This article appeared under the heading of "What My Religion Means to Me."

Following this very sincere expression of his personal creed by Joey, it seems somewhat fitting, although still very sad, to announce the passing of one who over his lifetime was constantly helping the other fellow and who lived every day in such a way that the people around him benefited. Our Class President, Bill Farthing, died on March 29, 1952, following a short period of hospitalization. The services and burial were held at Houston, Texas, on April 1. Kem Dean represented the Class at the services, and flowers were sent in the name of the Class. Notice of Bill's passing has been sent to each member of the Class. Steve Brophy wrote to Mrs. Farthing on behalf of the Class, and we are taking this opportunity to quote in part from this letter: "No one could possibly express the feelings of all of us who knew Bill so intimately and loved him so much. I use the word 'love' advisedly, because that is the way we felt about him. There was never a finer friend than Bill. To those who were privileged to know him as well as we all did for more than 40 years, he was the living example of the truth of the saying, 'The noblest work of God is man.' He was first and foremost a friend. Not just a friend of those who were fortunate enough to succeed in this world's pursuits — but just as truly the friend of the one who lagged a bit, or who failed to make the grade. He was the friend at Tech of the foreign student or the stranger from the West; of the serious lad who didn't know how to play. Yet, he was, too, the gay and lighthearted companion of those whom nature had endowed with *joie de vivre*. All were his friends and all loved and admired him. Bill didn't change. Success came his way, but the Bill Farthing of 1952 was the same lovable guy of 1916; always ready with the helping hand, always there when needed. Bill will always be 'President' of the Class of 1916." — RALPH A. FLETCHER, *Secretary*, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Laboratories, Inc., 463 West Street, New York, N.Y.

• 1917 •

In order that the class notes from the New York area might be as representative as possible, I asked all the 1917 men to contribute items about themselves, their business, or matters of general interest to classmates. The following items are the results of this inquiry, and, to avoid any possible complaint of partiality, I am listing the comments in alphabetical order.

Enos Curtin: "I resigned from the Economic Cooperation Administration as of March 1, 1951, with the idea of taking the summer off to sit on the beach and

reflect on the vicissitudes of life in bureaucracy. However, on May 26, I was on my way to Europe as a special consultant to the Office of the Special Representative, E.C.A., for 'only three months.' The three months lasted for five months, during which time I negotiated strategic material deals in seven European countries and three Middle Eastern countries, and negotiated or worked on strategic material deals in 15 African countries. The final three weeks weren't too bad, as my wife joined me in Paris, and, after I finished up the government work, we spent a couple of weeks wandering around Ireland, during which time I got in some good fox hunting and a little golf.

"At the end of October I was out of bureaucracy again and came to make my office with the Graham-Paige Corporation, of which I have been a director and on the finance committee for a couple of years. I had no more than warmed an office chair, than a deal developed in Germany; consequently, I spent most of December in Germany, and got back just in time for Christmas. I had just about recovered from New Year when the head of the Aluminum Division of the Defense Production Administration decided that the aluminum situation needed my attention abroad, so after an indoctrination in Washington, I headed for Italy on January 15 to spend about 10 days in Rome, a couple of days in Zurich, Paris, Düsseldorf, and Heidelberg as a consultant for that agency. Since returning in February, I have stayed as nearly put in New York as possible. I am doing some work for Graham-Paige and putting in some time on the problems of American and Foreign Power Company, to which I was elected a member of the board in March."

Carl M. Gilt: "I have been with the Consolidated Edison Company of New York, Inc., and the Brooklyn Edison Company, which was later merged with the Consolidated Edison Company of New York, Inc., since 1923. Most of the period has been in the Electrical Engineering Department, part of the time in charge of electrical design of generating stations and substations, and part of the time in charge of electrical design of the distribution system. Since 1944 I have been out of the direct engineering field as the assistant purchasing agent of the company. Since going out of the direct engineering branch of the company, I have retained my interest in engineering matters and have been active on various national engineering committees and am now a vice president of the New York State Society of Professional Engineers. I am married, have two children, both married, and one grandchild."

Arthur R. Knight: "I am still in the white lead business and have been in this business for a great many years. In addition, I have other interests of secondary importance in the lumber, oil, and railroad fields which only require me to serve on boards or committees. I am very active in public work and have been president of the Scranton Y.M.C.A. for a number of years. I am also chairman of the Pennsylvania State Personnel Committee of the Y.M.C.A., a member of the Executive Committee of the state

Y.M.C.A., and a member of the National Council of the Y.M.C.A. of North America. I give a lot of time to that activity including attending state and national meetings.

"I am also active in the Rotary Club of Scranton and expect to attend the international convention in Mexico City with my wife during the latter part of May. We will be down there two weeks or more, although the convention is actually being held from May 25 to May 31, inclusive.

"I still fly my own plane a great deal; in fact, have been flying ever since my experiences during World War I except for a few years directly after that war when I gave it up temporarily. I belong to the Sportsman Pilots Association and ordinarily attend most of the organized air cruises which that association has carried on continuously since 1935, with the exception of some of the war years. Last year I attended all three cruises."

Kenneth Lane: "I have delayed until the last minute in hopes that I might have something of interest to recite, such as a plane plowing through my house or the gift of a deep freezer or mink coat. No luck, however. All I can offer is that we are, and for some 18 months have been, plenty busy trying to increase production at the same time that we are more or less completely expanding and rearranging the plant to provide even higher production capacity. By some miracle, our efforts seem to have been successful.

"So far as concerns nonvocational matters, the only information available is purely statistical, which is admittedly uninteresting, except possibly to the statistics themselves. I have one (1) wife; two (2) sons, one married and the other one too fast on his feet to get caught yet; one (1) grandson; two (2) granddaughters; and no great-grandchildren. As to comments, I submit the following, which I do not represent as being interesting: I am opposed to taxes and in favor of the reunion. If my luck holds out — I have been able to arrange my affairs so as to permit attendance at all except the 1922 gathering — I'll be there, with my hair larded and my ears pinned back."

W. J. Littlefield: Joe sent me a memorandum in longhand which I will attempt to abstract for you. In view of the information revealed in this memorandum, you will understand why Joe's handwriting was somewhat shaky. His note reads somewhat as follows: W. Joseph Littlefield was married on March 22 to Mrs. Doris Mae Bayley of Great Neck, Long Island. They will live at Wilson Point, South Norwalk, Conn. Littlefield served for the past two years as president of the M.I.T. Club of New York. He is controller for financial analysis of the Johns-Manville Corporation. A postscript to the above note from Joe states: "If you think I am going to get away with going to the reunion minus my bride, you are mistaken." We will try to persuade Joe to be at the reunion and to bring his bride along.

Richard Loengard: Dick engineered a dinner last November for '17 in the New York area as a means of stirring up enthusiasm for the 35th reunion, which, by

the time this has been printed, will be a matter of history. In response to a telephone call the other day, Dick stated that he was looking forward to meeting everyone at the reunion.

L. L. McGrady: Mac wrote me on March 13, saying: "Sorry, Mac, I have no news to send. Best regards." By the time this appears in print you will have been advised that Mac died very suddenly on Friday, April 4.

W. D. Neuberg: Bill evidently has become a golf enthusiast for he writes me as follows: "My only comment for The Review is that I propose you establish a trophy to be awarded to the member of our Class who misses the shortest putt at any of our reunions. In order to qualify for this event, no special clubs may be designed with shorter than regulation leather for measuring distance to the pin. At least two members of the foursome must testify to the execution of this putt. In case of a tie, the player whose photograph has been taken while executing this putt will be declared the winner. In the absence of a photograph and in case of a tie, the shot will have to be repeated on the practice green where photographs will be taken."

C. Dix Proctor: "I have not run into any classmates in my travels, so I guess the only thing I can contribute is a report of my extracurriculum travels. With the 35th reunion rapidly approaching, I have reached the advanced age of taking winter vacations; in fact I think it started with the 30th. Last year Mrs. Proctor and I, in company with a couple who had been on three previous Caribbean cruises, boarded an American President Lines around-the-world freighter at Jersey City, and went through the Canal to San Francisco. This was our first freighter cruise and we enjoyed it so much that we repeated again this year and have about given up luxury cruises in favor of freighter cruises. Sure can recommend it for either a tired or retired businessman. This February we tried a foreign registry ship and sailed out of New Orleans on a banana ship with a group of six. We took on a load of jackasses on deck and that gave us a stop at Ceiba, Honduras, where we spent two very interesting days. Then on to Panama with stops on both sides of the Canal, down the west coast to Ecuador — Puerto Bolívar and Esmeraldas — where we loaded approximately 30,000 stems of very green bananas and headed back to New Orleans. Save for a bum magazine and a bum operator on use of telescopic lens, we have some fairly good colored movies and snaps for anyone interested in seeing them.

"Come the first of May we are moving the office to a new location, but still at 30 Church Street, so come down thereafter and we will show you how a hard-working salesman struggles after 35 years. No plush carpets."

W. I. McNeill: Now that I have disposed of all those who responded to my request for news, I might add that two grandchildren, golf, a few shows, and local community affairs have fairly well filled up my allocation of time for other than business activities. This summer Mrs. McNeill and I expect to cut loose for

about a month and fly over to Europe for a little tour of France, Switzerland, Denmark, Sweden, Norway, Scotland, and England. We are leaving on a particularly good day, Friday, the 13th of June, and will return a month later. I hope to take plenty of Ansco film along to record all activities and places of interest.

Before I close the New York section of these notes, I want to mention that Penn Brooks was the speaker at the annual meeting of the New York M.I.T. Club, held on May 13. We made this a '17 get-together night in honor of Penn.

The death of Leon McGrady on April 4 brought a flood of long-distance calls, relayed messages, and letters to Cambridge which was completely unprecedented. Mac had a host of friends, and all of them were close friends. He had, of course, always worked hard and presumably this continuous drive contributed to his demise. He had planned to be with us at the reunion and no one will be missed more than his genial self. Mac is survived by his wife, Lois, and daughter, Lois Lee, who themselves have wide acquaintance in the Class and to whom we all extend our deep sympathy. At the time of his death, Mac was manager of Eastman Kodak's cellulose products sales division. He had been at Eastman since 1930.

Joe McManus, who is vice-president and chief engineer of the Walworth Company, was recently elected to the board of directors. Emil Gramstorff, who heads the Civil Engineering Department of Northeastern University, was recently elected president by the Boston Society of Civil Engineers at their March meeting.

We were sorry to hear that Russ McCann passed away on March 16 after a short illness at his home in Rome, N.Y. He was employed as an engineer at the Revere Copper and Brass Company. — WINFIELD I. MACNEILL, *Special Correspondent*, 14 Hillcrest Avenue, Summit, N.J. RAYMOND STEVENS, *Secretary*, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge 42, Mass. FREDERICK BERNARD, *Assistant Secretary*, 24 Federal Street, Boston, Mass.

• 1918 •

Not all of us can bind the atoms of an education to the star of our destiny, principally, I suppose, because of the unrecognized emotional pressures, both within and without, which push us off our course. The undergraduate is too often all-unconscious of the direction in which he is going and the one in which he should go. Many of us never discover the difference. A few fortunate ones do, sometimes by being flunked out, sometimes as an unexpected benefit from an inexcusable war, sometimes because of propinquity, sometimes as the result of marrying a perceiving wife, and sometimes just because. Whatever the method, Sherman Albert MacGregor finally made it. He came out of Brockton High School to take Civil Engineering, finishing the job by doing a thesis on the "Elimination of the Grade Crossings in Union Square, Rockland, Mass.," with George Malley, who will presently be mentioned in this account again. But there was already, as always,

a straw in the wind, crossing up the wires of conviction and determination. For the last three of his four academic years, Sherman Albert, better known to '18 men as Sam, was active in Tech Show affairs.

For 16 years Sam tried to love civil engineering, but her voice was not the voice to woo him by transit or by plane table. So in 1934 he got into radio directing, would that we knew how. Why is plain enough. This led to acting on stage and screen as well as before a microphone. In 1951 he added T.V. Before me is a review by Brooks Atkinson praising the "admirable performance" of Jock MacGregor — no other than our Sam MacGregor — as the aging coachman in *Lace on Her Petticoat*. Also there are photographs showing Sam in a variety of roles. Writing about all this, he says: "At present I'm directing the well-known and justly celebrated radio show, Nick Carter, Master Detective. I played in my third Broadway show this fall. At the moment I'm playing a great inventor on Captain Video for three weeks. We have things on that show that beat anything I ever saw or heard at M.I.T. I'm making a nice living as a director and actor, and am enjoying life to the utmost. The next great step will be when I become a grandpa this spring. I never see anybody except George Francis Malley, who is doing very nicely for himself running everybody else's business! What a racket. There's nothing in the above to cause M.I.T. to run up flags, but I like it. Last spring we bought a house at 22 Archer Place, Baldwin, N.Y., and expect to spend many years here. If we ever get around to retiring, maybe we'll move, but the way things are going now, I never want to retire! Why stop doing something you want to do just because you're older than you were?" Why indeed? But the point is to be doing things you really want to do; following urges which know nothing of economic necessity nor necessarily of academic training.

On March 7 Clarence E. Bassett died suddenly of a heart attack at his home in Taunton. Remember how handsome he used to be? That thin, classic face matured into one which might have belonged to an infantry colonel, and the Engineering Administration changed into law. Clarence was a practicing attorney in Taunton for the last 17 years of his life. An original founder of the Bristol County Mental Health Clinic, he was also director and former treasurer of the Mechanics Cooperative Bank, as well as a member of the Bar Association. He is survived by his wife, a daughter, and two sons. — GRETCHEN A. PALMER, *Secretary*, The Thomas School, The Wilson Road, Rowayton, Conn.

• 1919 •

Our condolences are extended to Mrs. Byrne on the death of our classmate, Perry B., who passed away on March 14. He was formerly president of the Damariscotta and Newcastle Water Company. He served in the Navy in World War I and was an ensign in the Naval Reserves. He was a member of the Welles-Hussey Post of the American Legion, and was well known in Boston where he was once

associated with his father in the Bryne Company, construction engineering firm. He was also with the United Fruit Company in the purchasing and merchandising department.

Ark Richards dropped a card to say "hello" with nothing new to report. Edward M. Sherman has changed his address from Canton, Maine, to 137 Park Drive, Suite 9, Boston 19, Mass. Received a very interesting note from Lloyd R. Sorenson which I quote: "This fall it will be 34 years since I left Tech to come to Newport News and it has been a very interesting time. This June our company completes the S.S. *United States* — largest and fastest merchant ship built in this country. I expect to make the maiden voyage on July 3. I am planning to visit large shipyards in England, Scotland, Norway, Sweden, Denmark, and Holland and return on the S.S. *America*, which we completed in 1940 while I was assistant naval architect. I have been cost engineer since 1942." He further writes that one daughter attends the University of North Carolina, another daughter is a senior at Michigan State, and one son is a student at Virginia Polytechnic Institute.

Timothy E. Shea, for many years a member of the Bell Telephone Laboratories and recently assistant vice-president in personnel relations at the American Telephone and Telegraph Company, returned to the Bell Laboratories as a vice-president. His duties include responsibility for the military development program and the relations with the Army, Navy, and Air Force in connection with that program. Mr. Shea is a former fellow of the Acoustical Society and the Institute of Radio Engineers, and a fellow and past treasurer of the Society of Motion Picture and Television Engineers. In recognition of his accomplishments, he was awarded an honorary doctorate of science by Columbia University in 1946, and an honorary doctorate of engineering by the Case Institute of Technology in 1949.

Alexis R. Wiren has now completed his latest booklets entitled *Your Happiness*, published by the Bureau of Business Practice, New London, Conn., and *You Are the Boss*, published by the National Foremen's Institute, Inc., also located at New London, Conn. Congratulations, Alex, on this wonderful compilation of psychology. I am sure many of our classmates would like to obtain a copy of your newest achievements. Alex, at present, is director of methods and planning, Group Department, the Equitable Life Assurance Society of the U.S., 393 Seventh Avenue, New York City. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N.Y.

• 1920 •

By this time it is no longer news that our illustrious classmate, Ned Cochrane, has been appointed dean of engineering at M.I.T., to succeed Tom Sherwood '24. This is a big job as well as a high honor and we know it will be in capable hands. Congratulations, Ned!

Foster Doane has become production manager of Bergstrom Paper Company, Neenah, Wis., leaving Sandy Hill Iron and Brass Works where he has been for

the past nine years, after 12 years with International Paper Company. Clint Bond has moved to East Dover, Vt., from Adams, Mass. Austin R. Frey has left Annapolis and is in Monterey, Calif. Major General Lyman P. Whitten has returned from abroad and is at Olmstead Air Force Base, Middletown, Pa.

Clem Hallinan has been appointed fire commissioner of Plainville, Conn. Bill Nelson has been elected vice-president of the A. C. F. Brill Motors Company, Philadelphia, Pa. He is a retired naval captain and is also vice-president of Hall Scott Company, Berkeley, Calif.; vice-president and director of Nelson Knitting Works, Minneapolis; director and secretary of the J. G. Brill Company, Philadelphia; and director and vice-president of Parr National Warehouse Company. Ernie Whitehead has been named area representative to the Alumni Council, representing the M.I.T. Club of Central Massachusetts. Professor Soderberg, who, as everyone knows, is head of the Mechanical Engineering Department at M.I.T., was awarded the Ericsson Medal at the 64th annual meeting of the American Society of Swedish Engineers.

Kenske Hashimoto, formerly with the Aero Research Institute at Tokyo Imperial University at Tokyo, Japan, died recently, but the date and circumstances are not known.

Barbara Bugbee, your Secretary's daughter, was married on April 19 to Andrew Kopperud, Jr., San Francisco, Calif. Among those present at the wedding in Winchester were Perc Bugbee, Jim Gibson, and Buck Clark, all looking hale and hearty and imbibing quantities of champagne. Perc Bugbee's daughter, Margery, was married to Selwyn Atherton of Hanover, N.H., on May 10. Other details not available because these notes are being written before that date. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Don G. Shingler, a brigadier general and chief of the Missouri River Division Engineers of the U.S. Army Corps of Engineers, has been in the thick of the battle with the greatest flood ever experienced on the Missouri River. Edson I. Schock, who is associate professor of mechanical engineering at the University of Rhode Island, has published a book on amateur boatbuilding entitled *How to Build Small Boats*. Included in the volume are plans for 12 different sport and pleasure craft with all the "know how" for the required tools and operations through painting and varnishing. John J. Healy, Jr., assistant to the vice-president in charge of research, development, and patent activities of the Monsanto Chemical Company, St. Louis, was chairman of the annual M.I.T. luncheon at the New York Engineers' Club during the February convention of the Technical Association of the Pulp and Paper Industry. Through the courtesy of J. N. Stephenson '09 and Sax Fletcher '18, we have photographs of the group with Jack introducing Professor W. K. Lewis '05. Ed Lockwood, Joe Wenick, and your Secretary attended the April meeting of the M.I.T. Club of Northern New Jersey to

hear Dean George R. Harrison.

The current Alumni Directory lists Jack Rule as a member of the Committee for Nominations for Departmental Visiting Committees, Lark Randall on the Advisory Council for Undergraduate Publications, and Josh Crosby, Mel Jenney, Frank Kittredge, and Ace Rood as representatives of various M.I.T. local clubs. Whit Spaulding is president of the M.I.T. Association of Baltimore and Ed Praetz heads the M.I.T. Club of the Merrimack Valley. Gus Kinzel is a member of the Visiting Committee on the Department of Metallurgy, Art Raymond for Aeronautical Engineering, and Bill Sherry for the Division of Industrial Cooperation. Among the Honorary Secretaries are Ed Farrand, Georgia; Harry Field, Hawaii; Whit Spaulding, Maryland; Cac Clarke, Munnies Hawes, Sumner Hayward, and Ed Lockwood, New Jersey; Irv Jakobson and George Welch, New York; Bill Sherry, Oklahoma; Charlie Herty, Pennsylvania; Gene Rudow, Washington; Charlie Manneback, Belgium; Helier Rodriguez, Cuba. Andrew Jensen, Jr., who heads his own consulting engineering firm, has a new home address at 28 Westland Street, Worcester, Mass. William L. Knoepke, of the American Pencil Company, lives at 33 Coniston Road, Short Hills, N.J. Irving K. Peck, recently elected vice-president of the Columbia Gas System, Inc., has left the Pittsburgh area and now makes his home at 3263 Avalon Place, River Oaks, Houston 19, Texas. William H. F. Rose, of the Paul Valve Corporation, reports a new address: Box 185A, R.D. No. 1, Milford, N.J. Douglas Weatherston, division exploration superintendent, Standard Oil Company of Texas, has a new business address at 1901 Alamo National Building, San Antonio.

Ray and Helen St. Laurent have returned from a trip to the West Coast where Ray reports a luncheon meeting with Jack Kendall in Los Angeles. Saul and Rigi Silverstein left in May for a trip to Belgium, Saul as a member of a Mutual Security Administration group representing the United States. *Railway Age* of February 4 has the "success story" of the Monon under the heading, "Making an 'Unnecessary Railroad' an Asset to Shippers and Its Territory." As usual, President John W. Barriger comes in for a large share of the praise, the unsuccessful and successful stages of the road being referred to as BB and AB—Before Barriger and After Barriger. Robert F. Miller writes that he was able to attend the M.I.T. Regional Conference in Los Angeles last January while on a business trip. He visited with Jack Kendall and Sam Lunden and stopped off to see Bill Sherry in Tulsa on the way back. Bob has written a detailed account of the trip he and Helen made to Cuba with Helier and Graciela Rodriguez which will be run in a later issue. Robert D. Fairbanks is field manager of Altec Service Corporation of Boston and makes his home in Wellesley Hills. He and Mrs. Fairbanks have two children: David, a graduate of Worcester; and a married daughter, Sarah, and a two-year-old granddaughter. Glenn E. Fargo, President of the Fargo Company of Huntington, W. Va., has been engaged in furniture

manufacture for a number of years. Glenn is a director of the Bradshaw Diehl Company. He and Mrs. Fargo have three children, Glenn, Jr., Lewis, and Virginia.

Raymond C. Fisher is a research engineer with the Boeing Airplane Company, Seattle, Wash. He is married and has no children. Ray reports occasionally seeing brother Hexalphas Bill Matthews of Spokane and Dave Woodbury of La Canada, Calif. George F. Gokey, Jr., is president and treasurer of Gokey Properties, Inc., of Jamestown, N.Y., and chief engineer of Hotel Jamestown. He is married and has no children. Manuel M. Green is president and treasurer of the Atlantic Electrical Supply Company, Worcester, Mass., and president of the Atlantic Realty Corporation. He and Mrs. Green have three sons: twins Robert and Richard, respectively Harvard '50 and Syracuse '50; and William, Miami '52. Herbert W. Gwynn is a fire protection engineer with the Underwriters Laboratories, Inc., Chicago, Ill. He is a member of the National Fire Protection Association, chairman of the Committee on Fire Extinguishers, and advisory member of the Technical and Standards Committee. He is married and has no children. Arthur R. Harvey is chief engineer and director of the Gardner Board and Carton Company, Middletown, Ohio. He and Mrs. Harvey have a married daughter, Marabelle, a graduate of Smith and Northwestern, and a two-year-old granddaughter.

Victor C. Hassold is executive vice-president of the Steel Heddle Manufacturing Company of Philadelphia and a member of the board of managers of the Fernwood Vault Company. He and Mrs. Hassold are the parents of triplets: Robert, a graduate of Hampden Sydney College; Richard, Roanoke College; and Margaret, with the Child Education Foundation in New York. Henry R. Hatch is manager of the St. Clair-40th Street Office of the Cleveland Trust Company, Cleveland, Ohio, and a trustee of the University School and the Lakeview Cemetery. Son Henry, 3d, was graduated from Yale and the Harvard School of Business Administration; William was graduated from Williams. Henry says he has recently seen George Piroumoff, President of the Brockway Motor Company of New York.

Plan to attend Alumni Day, Monday, June 9, in Cambridge and our 1921 party at the Hotel Statler that afternoon.—CAROLE A. CLARKE, *Secretary*, International Standard Trading Corporation, 67 Broad Street, New York 4, N.Y.

• 1923 •

This issue of The Review may be delivered in time to remind members of the Class of the annual meeting on Alumni Day, June 9, at five o'clock at the Statler Hotel.

The alumni ballot, which went out in March, contained the name of William L. Stewart, Jr., as a candidate for one of the alumni term members of the M.I.T. Corporation. Bill is executive vice-president of the Union Oil Company of California at Los Angeles. The ballot also contained the name of George A. Johnson as class representative on the Alumni Council.

J. W. Beretta of San Antonio, Texas, got his picture in the *San Antonio Express*

Magazine for April 13 in connection with a profusely illustrated story about the First National Bank of San Antonio, of which he is president. The First National Bank of San Antonio has a handsome old building of stone construction which Jack and the other directors have fixed up. Its operations are thoroughly modern, being one of the first banks to open an automobile drive-in window, but at the same time they have preserved a leisurely atmosphere with Victorian furniture, Turkey-red rugs and carpets.

I understand that Charles H. Ducoté and George W. Bricker, Jr., have become associated with the Celanese Corporation of America. Both are in New York City at present. Duke is to go to Paris eventually for the company but plans to be in Boston for the wedding of his daughter in June.—William W. Vicinus has been in São Paulo, Brazil, for a number of years. He is now back in this country in the engineering business in Paducah, Ky.

These notes reported a little while back on P. V. Martin. A clipping from the periodical *American Metal Market* for March 5, 1952, records that Martin is just back from India and that he has been appointed a vice-president in the Koppers Engineering and Construction Division. He was scheduled on March 15 to leave for Santiago, Chile, to become Koppers' representative on the Board of Directors of the Pacific Steel Company of Chile. During the first part of 1951, Martin was technical adviser to the Indian Tariff Commission, doing surveys of India's steel industry and doing development work on new steel-pricing policies. Later in 1951, he served as technical adviser to the attorney-general of India while that official was acting privately as a mediator in proceedings to revise the capital structure of the Tata Iron and Steel Company.—HORATIO L. BOND, *Secretary*, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, South Broadway, White Plains, N.Y.

• 1924 •

Who should drop in one day recently, brown as a berry and a living advertisement for the California climate, but Phil Bates. With his son now on the Institute's research staff, Phil was combining pleasure with business. In the line of business intelligence, after several unsuccessful tries the name of his company has now been stabilized. It's Riker Laboratories, Inc. Product: a wonder-drug for relief of high blood pressure. And just a few days before that, we had a regular procession of '24 visitors. One day it was George Parker, ivory hunting for smart young graduates; the next, Cy Duevel, who was up to show his son what the Institute looks like; Dick Shea, General Electric Electronics expert, over from Syracuse to consult with the Institute electronics boys on something vital, maybe transistors; and Will Blaisdell, also visiting the Placement Office with no more success than George. This year's graduates are really in demand.

The B. Alden Cushmans of Rebel Lane, Darien, Conn., had a month in London this spring. And add to the list of travelers

the name of Clarence Martin Cornish, up from Mexico City to see spring come to Rockefeller Center. In New York for a recent meeting of the Tech club, your Secretary failed to turn up any great outpouring of '24 men. Winkie Quarles, Julian Joffe, and Nate Schooler, the latter a newly-elected director of the club, about did it.

Blanchard Warren, having just completed a tour which included British Columbia and Mexico, liked the West Coast so much that he is soon to return to Portland as Pacific Coast manager for the Bird Machine Company. This is really expansion, since the company letterhead presently carries their western office address as Evanston, Illinois! However, he'll stay around Boston long enough to be with us on Alumni Day. Don't forget, it's at the Statler again this year, and we will have a room of our own in which to foregather before the banquet. You'll find it listed on the board in the lobby.

Latest entry into the political arena is Gordon Wheeler, who ran for Planning Board in the town of Foxboro, Mass. As we go to press, there is no intelligence as to the outcome, but it was undoubtedly a spirited race. And a New York columnist is doing his best to boost another classmate into high office. According to Jack Barnes of the New York *Enquirer*, in a paragraph on Jimmie Doolittle: "Both parties are wooing the M.I.T. graduate as potential vote-getter running for Vice-President. Jimmie packs a terrific number of the 12 million organized veterans' votes."

Colonel James L. Guion, one of our Army Ordnance men, has come back to the States after a long tour in Hawaii. Now at the Springfield Armory. Want to see a minister collapse in the pulpit? That's what the Reverend Gertrude Harris says she would do if a '24 man ever showed up in her congregation. Church of Good Fellowship, Naples, Maine, is the place. Any Sunday morning will do it.

We're doing all right in the Alumni Fund still — ahead of the last year's dollar total now, but behind in numbers. If you're not in yet, the books will be open through June 30. And the Institute, not to mention Frank Shaw, will be highly pleased. — HENRY B. KANE, *General Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

A group of 20 members of the Class of 1925 held a meeting in the Campus Room of the M.I.T. Graduate House on April 15. The following were present: A. B. Bailey, XV, Rusty Blair, II, Sam Caldwell, VI-A, F. L. Foster, III, David Goldman, VI, Fred Greer, II, L. T. Gregory, XV, J. H. Howard, II, F. B. Kent, V, Mac Levine, II, H. F. McKenna, E. D. McLaughlin, I, F. J. Mulcahy, VI, H. V. Robichau, I, Ken Robie, I, Ave Stanton, XV, Clarence Thulin, XIV, F. J. Turnbull, II, W. N. Westland, I, and C. P. Worthington, I.

President Jim Killian '26 spoke to the group and brought them up to date as to general activities around the school while H. E. Lobdell '17, Executive Vice-president of the Alumni Association, told us

about some of the history of our association and spoke of its present activities. Everyone in attendance thought that the meeting was well worth while and indicated that we should have more. The attendance was not as large as we had hoped but many were unable to attend because of previous engagements. Chet Trask was on a trip to Florida and couldn't make it, while Bob Ashworth replied stating that he had to be at the Georgia Cotton Manufacturers Convention in Boca Raton, Fla., on the date we had selected.

We are still receiving 1952 class dues as a result of the letters sent out by Ave Stanton and Fred Greer. If you have not already made your contribution, please do so.

Our poll regarding the advisability of a June, 1953, reunion to date indicates no opinion on the part of about one-half of those replying, while the majority of those expressing an opinion have indicated they are agin it. If any of you have strong opinions on this matter, please let us know. — F. LEROY FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

• 1926 •

It appears from the volume of material in your Secretary's mail that we will again have to skip the biographies. However, that is a more or less permanent project so a couple of months hiatus surely will not upset it. As is our custom, we will mention bad news first. Captain William H. Magruder, U.S.N., succumbed to a long illness in February. He was an Annapolis man who came to the Institute for graduate work and obtained his degree with our Class. His Naval activity had been in the production of ships at Quincy, Mass., and Norfolk, Va. For the Class, your Secretary extends heartfelt sympathy to his wife and two sons.

During a recent visit to New York, your Secretary ran into two '26 men in the strangest of places — in the milling five o'clock mob down in the Lexington Avenue subway station at Grand Central. Since we were being swept in opposite directions by the crowd, about all we could accomplish was a handshake. Leonard Milano handed me his card and stated that Stuart John, who was with him, worked for the same company. After reaching the relative quiet of my hotel room I was able to read the card and learn that Leonard is consultant for Commonwealth Services, Inc., of 20 Pine Street, New York City. A post card from Tony Gabrenas came from Miami while we were sitting close to the fireside in Boston. Pete Doelger also flaunted some of the same in our faces with a card from the sunny south while we shivered and shoveled snow. A couple of clippings tell of papers recently presented by '26 men. John Nicholas, who is professor of agricultural engineering at Penn State, has had a paper published in *Agricultural Engineering* on "Radiation in Agriculture," and Edgar Godley, who is with the Naval Ordnance Plant at Indianapolis, presented a paper on "Computing Mechanisms for Airborne Fire Control" before the Indiana Section of A.S.M.E. Bill Sessions recently sent us the program of the Cleveland Engineering Society which contained a

story (together with a handsome photograph) of Jim du Pont's lecture, "We're Working While Rome Burns." We haven't heard the lecture but understand that Jim really puts across a stirring message. Some of you may have heard Jim on Edward R. Murrow's radio program, "This I believe." This is a daily radio program in which successful men or women present their personal philosophy. In order to cover the country, the five-minute philosophies are transcribed and you may hear them on the air from time to time. Jim sent me a reprint of his five-minute philosophy together with 15 others. I think he has some additional copies, so, if any of you are interested, why not drop him a note at Wilmington, Delaware. I found the series most interesting and Jim's among the best.

We have an interesting story from Gordon Spear. As many of you know, Gordon has been very active in alumni affairs in the Detroit area, having been president of the Detroit M.I.T. Association for the past two years. He and his wife have been enthusiastic travelers — by automobile. Recently they made an interesting trip and wrote me about it. The best way to pass it along is to quote from his letter: "My first act upon receiving The Technology Review is to turn to the Class of '26 notes. I am very much interested in all these articles and wish to express appreciation for the considerable amount of time and effort which you spend in keeping the Class informed about its members.

"This year, Mrs. Spear and I had been planning a vacation in Old Mexico. The M.I.T. Club of Mexico City sent notices to all class officers in the U.S.A. of a five-day M.I.T. fiesta in Mexico, March 5 through March 9. While this was a week earlier than we had planned, we quickly adjusted our plans in order to attend. Dr. and Mrs. Compton were there along with Lobby Lobdell '17 from the Institute and some 40 M.I.T. men with their wives. At a formal banquet where Dr. Compton was the principal speaker, there were approximately 120 people present, including a few guests from other schools such as Harvard, Yale, and Pennsylvania. The M.I.T. Club of Mexico arranged various tours of the city and surrounding areas so that we had an opportunity to sight-see and still be in the company of M.I.T. men and their families. The Class of '26 was, as usual, the best represented class at this fiesta, having five class members in attendance. However, I was the only one from the U.S., since Jose de Martino, A. W. Gass, D. J. Valdes, and R. W. Plummer are all located in Mexico. De Martino is part owner of the Fronton Palace and Dick Plummer is representative of the Arthur D. Little Company. I cannot recall the specific activities of Gass and Valdes.⁹ Should I suppose if we include 'Lobby' as a member of our Class, that number might be stretched to six? [Lobby is an honorary member of '26.] Tom Nevin '24, President of the M.I.T. Club of Mexico, and his able assistants did a fine job in planning this fiesta and all concerned had a most enjoyable time. The high light of the M.I.T. gatherings was a cocktail party and buffet supper at the home of Gonzalo Garita, Jr., '16. Mr. Garita is one of the foremost architects in Mexico and, together with his very

charming wife, they were among the finest hosts it has ever been my pleasure to meet. They have a lovely home in the Chapultepec area overlooking Mexico City.

"Mrs. Spear and I wound up our stay in Mexico City by attending the bullfight on Sunday and on Monday left for El Fortin de Flores a small town near Vera Cruz where tropical flowers grow in great profusion. The hotel at El Fortin has a swimming pool which is kept filled with gardenias and, all in all, is a very lovely spot. We proceeded from here back to Mexico City and then to Taxco, a quaint silver-mining and manufacturing town located on the side of a mountain with very narrow, cobblestone streets. From Taxco, we went on to Acapulco, the best-known seashore resort in Mexico. Although a beautiful spot, it was a bit too hot and humid. So after three days in Acapulco, we started our trip back to Detroit, which was 2,700 miles away, and which we drove leisurely in eight days. The entire trip was 6,000 miles of quite trouble-free driving over excellent but mountainous roads, the only difficulty encountered being the low-octane gasoline available in Mexico. [Gordon, is this a plug for GM cars? GWS] Last October we had a visit from Shantanu L. Kirloskar with his wife and son, Chanda. This is the second time since graduation Shantanu and his wife have visited us. He was very sorry he could not attend the reunion because of pressing business matters in India. Shantanu is now managing a new plant of the Kirloskar Brothers concern (started by his father and uncle), manufacturing small Diesel engines of up to five horsepower. These engines are in great demand as small stationary power units and for pumping water for irrigation or livestock use. The Kirloskar Brothers concern has expanded in the last 25 years from one plant to four. They now operate their own foundry and manufacture machine tools, electric motors, iron plows, well pumps, and agricultural implements.

"Shantanu's son, Chanda, has been in this country for five years and attended Chauncey Hall, University of Maine, and the University of Wisconsin studying to become an electrical engineer. He was unable to get into M.I.T. because of the restriction on foreign students. I don't know when I shall be in the East again, but in the event you should return to Detroit, please be sure to call." * (Secretary's Note: Domingo Valdes is superintendent, Cia Jabonera, "La Union," but Al Gass must have gone recently to Mexico since at reunion he told us that he was a contractor in Greenfield, Mass.) By sending along a rather complete story about once a year, Gordon has automatically become an assistant class secretary. Whit Ashbridge also has been nominated to the same status because of his annual epistles that he sends along from South America. There still are plenty of vacancies. In order to qualify, all that is necessary is to send your Secretary a good report once a year. The ones from foreign countries are most welcome and may spare you from hearing again and again about what goes on at Pigeon Cove. We are looking forward to hearing from you real soon whether you live in some far-off land or not. — GEORGE WARREN SMITH, General Secretary, E. I. du Pont de Nemours and Com-

pany, Inc., Room 1420, 140 Federal Street, Boston, Mass.

• 1928 •

The New York *World Telegram* recently carried a note stating that Al Dempewolf had done a very "neat job of convention handling" at the recent convention of the Association of National Advertisers. Al is now advertising director of the Celanese Corporation.

Before me, as I start this next paragraph, is a smiling picture of Lieutenant Colonel Alfred C. Knight and with it is a release from the Public Information Office of Camp Edwards Headquarters at Falmouth, Mass., which states that "Colonel Al" is retiring from the U.S. Army after 20 years of service. The rest of the notice is as follows:

"He is married to the former Ruth Crocker of West Roxbury. The couple have three children, Alfred C. Jr. 9, Laurel R. 8 and Lois H. 3. They reside at Marston Mills, Cape Cod. Colonel Knight was with the First Army in Europe shortly after D Day and took part in five major campaigns. In 1943 he was communications officer with the Combat Ordnance. On returning to this country he was assigned to the Pentagon in the office of Chief of Ordnance and was later assigned as executive officer at Raritan Arsenal, New Jersey. His last assignment was that of Post Ordnance officer at Camp Edwards. Between 1946 and 1947 he was a student at the Army Industrial College. He has the European Theatre ribbon with five battle stars, the Bronze Star and the Army Commendation Medal."

Ye Editor can't help but remember that he had just barely finished recording such events as engagements, marriages, and births when he got this retirement notice. Yes, we have our 25th reunion coming up next year which will make us all catch up with our arthritis, but let's hope we don't get a rash of retirements, at least until 1960. Jim Donovan has just sent me a letter full of a lot of '28 news. As President of Artisan Metal Products, Inc., of 73 Pond Street, Waltham, Mass., Jim is in a position to see a great many of our classmates. Our hat is off to him for a fine job of reporting which we herewith pass along in the following quoted paragraphs:

"Bill Gorfinkle, Course V, has for years been trying to get together a gelatin manufacturing outfit of his own. After getting out of the Army, he joined up with the Hormel organization in Austin, Minn., and built a plant for making gelatin. Later, he worked as consultant for various firms in the United States and Canada and then, this last fall, succeeded in getting together capital and buying the old J. O. Whitten Company in Winchester, Mass. Bill is now treasurer of the company and is devoting the normal seven days per week required of an entrepreneur, trying to get the thing to go better and better.

"Two or three months ago I ran into Jay Collins at the Chemists' Club in New York. He has, for some time, been with the National Lead Company—I believe in organic chemical sales. Jay invited me home to dinner that night, when I met his pleasant children and charming wife. After a bit of reminiscence, Jay and Barbara drove me to the airport, and I caught the plane

home. Here in Waltham we have our old classmate and representative in the Alumni Council, Arthur Nichols, Course II. Art, and his brother, Hart (M.I.T., 1927), have had full charge of the family business, W. H. Nichols and Sons, since the death of their father last year. Besides representing the Class on the Alumni Council, Art has been very active in raising funds for the Boys' Club of Waltham, and was a member of the committee to build a new high school in Weston to take the place of the one burned down by some students who objected to going to school! About a year or two ago, Art and his wife, Mary, had dinner with us and Al and Mrs. Garcia, while Al was here for one of those intensive courses at the Harvard Business School.

"Occasionally while in New York I call at the American Chiclé Company and catch a glimpse of Bob Murphy. Hardly ever have a chance to say 'Hello' to him because he's always in conference or working, and gives everything he can to running that large factory as well. Our old classmate, Morey Beren, Course X, is in charge of the plant of Pyrotex Leather Company, Leominster, not too far away from Waltham. He and his wife and daughter are now probably thinking about going out to the cottage they have on the lake for the summer. Last evening I telephoned Charlie Richheimer, Course XV, in Jacksonville, Fla. He is now a partner in the architectural and engineering firm of Reynolds, Smith and Hills. Charlie said, sure, he's going to be here for the 25th reunion; couldn't keep him away.

"On the same project, I had occasion to call Morey Klegerman, who is the head of Alexander Potter Associates in the big city of New York. They specialize in sewage treatment and general water works problems. A few months ago I had luncheon with Morey and saw a report which he had done on a water works problem in Israel. Morey was over there some time during this last year and made the studies; then, I believe, the report itself was prepared and published in Israel. Our classmate, Ed Ure, is working with Morey, and we had a pleasant time together."

Thanks again to Jim Donovan for a very fine letter. Will some of the rest of the gang follow this good example and tie a string around their fingers so that a letter describing present activities is dictated along with your next batch of correspondence. Beyond that, all you need is a three-cent stamp, an envelope, and the following address. We assure you that the result will be much more interesting than warmed-over news from clippings and other secondhand sources. — GEORGE I. CHATFIELD, Secretary, 49 Eton Road, Larchmont, N.Y.

• 1929 •

This year's absence of class notes has been your Secretary's fault. The response from the boys last summer and fall was very good. However, I have been "buried" in this rather hectic construction business and consequently let the notes material pile up on my desk.

Arnold Conti, IV-A, who was associated with me in this business, left during the past year, having purchased the steel fabricating business of E. K. Carpenter in Lynn, Mass. His address is E. K. Carpen-

ter, Inc., 28 Harbor Street, Lynn. Arnold is married, has two boys, and lives in Nahant. Even though he has four years of active Navy duty behind him, we cannot get him interested in sailing.

Had a very interesting letter from Glenn Andrews, X, who is with Shell Oil Company at Wood River, Ill. Glenn praised the St. Louis alumni group and sent along some notes, and I quote: "Here on the Shell terrace, which is a group of 10 homes flanking the front entrance to the largest refinery in the state of Illinois (currently operating with about 135,000 barrels daily crude oil intake), my nearest neighbor is George Siegelman, an M.I.T. graduate, I would guess, of about the Class of '37. George is manager of our Alkylation Department, while I am manager of the Utilities Department. Until recently, another neighbor was Ralph Crosby, M.I.T. '29, who was manager of the Cracking Department. Each resident here is a manager of one of the operating divisions of the refinery.

"Ralph is out of the country now, but has his headquarters in our offices in the R.C.A. Building in New York City on the 37th floor. He and I were together in Course X and came to work for Shell on the same day, July 1, 1929. Our 22d anniversary with the company, therefore, will be tomorrow. Probably I do not need to reintroduce him to our '29 classmates as the captain of the hockey team in our senior year.

"Just to bring my own personal notes up to date, I married the secretary of my boss (not his daughter, as he had none), Elisabeth Brauer, in Hammond, Ind., on Valentine's Day in 1931. Ralph and I were then working together at Shell's refinery in East Chicago. Our family came to this area about three years later and we have four daughters; the eldest 19 and the youngest seven. This past year they have ranged from first grade to first year in college (Valparaiso University). The New England influence and my own ancestry shows up somewhat in their names, which are Priscilla Elisabeth, Katherine Abigail, Emily Louise, and Helen Marie."

Standard Oil Company of Indiana recently announced the election of David Graham, VI, as financial vice-president and director. He has served with J. P. Morgan in New York, J. Walter Thompson in London, was director of the office of pulp allocation with the War Production Board during the War, and has since been with Weyerhaeuser and West Virginia Pulp and Paper Company. Samuel Levine, VI-A, has been made general manager of the General Electric Company's home heating and cooling department at Bloomfield, N.J. Sam has been with G.E. since leaving school.

Marshall H. Fay, XVI, has been made United Air Lines manager of flight operations for the New York-Newark area. Marshall is transferring from Chicago. Putnam Cilley, VI, sends along a clipping from *Sales Management* which should bring us up to date on Paul Keyser, Jr. Putnam doesn't say anything about himself but I assume he is with the Foxboro Company. Here's the word on Paul Keyser: "Socony-Vacuum Oil Company's Paul V. Keyser, Jr. likes to spend his summers on the briny. For a little while each year Socony's new

general manager of domestic marketing forgets that if everyone reverted to sailing — as he does — his company would lose a big hunk of market. Essentially Paul Keyser has just the sort of technical mind, tinged with a touch of the romantic, that is perfectly suited for the important work he does. His first job was in the Technical Service Department of Socony-Vacuum Laboratories in Brooklyn, where he worked on specialty and process products. He became assistant manager of the department in '37, manager in '38. Later he was manager of the Research and Development Department at the labs in Paulsboro. Today he lives in Douglaston, L.I. There he keeps his boat, enjoys working on it (he even built one of his own) and teaching daughter Kathi some new sailing twists. Under his tutelage she has become a good enough sailor to win two trophies at Shelter Island!"

Atlas Powder has elected William J. Wiley, XV, vice-president and a member of the board of directors. Bill has been with International Resistance Company and the Rohm and Haas Company. From the Cape comes word that Frank Horn, IV-A, has been appointed to the Barnstable Finance Committee. Frank shifted from summer to year-round residence on the Cape a few years ago and entertained some of the boys at the last reunion. He is still with the Potter-Horn Company, contractors in Boston. Frank Pierson, XV, came through with a letter bringing himself up to date. Frank made the 20th reunion, so wasn't too far behind. He is chief manufacturing industrial engineer at Atlantic's Point Breeze Refinery in Philadelphia, a most interesting job according to Frank, who also keeps busy by teaching at the new Camden center of Rutgers University.

Hope to see some of the boys at Alumni Day in June and gather some live news. — PAUL F. DONAHUE, *Secretary*, Conti and Donahue, 239 Commercial Street, Lynn, Mass. FISHER HILLS, *Assistant Secretary*, Dewey and Almy Chemical Company, 62 Whittemore Avenue, Cambridge 40, Mass.

• 1933 •

During the past few months I have accumulated a number of clippings and memos which should be of interest to all — here they are at random as they have been received.

Walter V. Skees, 3303 20th Street, North, St. Petersburg, Fla., writes that he is taking graduate studies at the University of Florida after four years at Venezuela. After three years with Standard Oil and Gulf Oil, he accepted a position with the Public Works of Venezuela and an appointment of the Military Junta; he is now on a year's leave of absence for study in the U.S.A.

A memo from the Magnolia Petroleum Company in Dallas, Texas, that Dayton H. Clewell has been appointed director of the Magnolia Field Research Laboratory in Dallas. Since 1946 he has been assistant director. The Philadelphia *Bulletin* tells us of the work of Carl Rolle as "Mr. Stockpile" with the Munitions Board in Washington. Previous to his entry into government work during the last War, Rolle was with United Fruit and Interna-

tional Nickel Company. From the *Wilmington News* we learn of the appointment of Pierre S. du Pont, 3d, as a director of the Wilmington Trust Company. He is director of sales of the Rubber Chemicals Division of the company's Organic Chemicals Department. Dorothea Shanney has been appointed chief dietitian at the Cambridge City Hospital. Athelstan F. Spilhaus has written a series of articles on weather in the *Washington Times Herald* during 1951.

Colonel Douglas G. Ludlam was appointed commanding officer of the Boston Ordnance District. A note from the *Cumberland Evening Star*, Workington, England, tells of the annual visit of Emile Bustani, the Lebanese millionaire, to London. Bustani has become a deputy in the Lebanese Parliament — he is one of 12 independent Radicals. A citation for services rendered during World War II was awarded to George R. Vila of Woodbury, Conn. The award was granted for his service with the Technical Industrial Intelligence Committee of the Joint Chiefs of Staff during World War II. He is general sales manager of the Naugatuck Chemical Company. Professor Frank A. Record has been appointed chairman of the Electrical Engineering Department at Clarkson College. Frank has been at Clarkson since 1939, with a four-year leave of absence during the War, at which time he was back at M.I.T. He has been a full professor since 1950.

Dick Morse, President of National Research Corporation in Cambridge, announced that the company will build additional plant facilities on Charlemont Street in Newton, Mass., because of the urgent need for more space. The main office will remain at 70 Memorial Drive, Cambridge — "Research Row." The activation of a wholly-owned subsidiary, Vacuum Metals Corporation, was also announced. This new company will undertake the commercial production of vacuum cast gas-free metals and alloys. Dick also announced the formation of the National Research Corporation Scientific Trust for use on unrestricted basic research work, a most commendable and forward-thinking program.

That's all for now. Please keep us informed and we will try to get as much information as we can into *The Review*. — GEORGE HENNING, *Secretary*, Belmont Smelting and Refining Works, Inc., 330 Belmont Avenue, Brooklyn, N.Y. ROBERT M. KIMBALL, *Assistant Secretary*, Room 24-105, M.I.T., Cambridge 39, Mass.

• 1938 •

In addition to noting that Given Brewer spoke recently before the Amesbury, Mass., Rotary Club, we have three news items of interest. The first is that Colonel Henry C. Thayer has been assigned to Redstone Arsenal, where he is taking over duties as chief of the National Procurement Division. He has transferred from Watertown Arsenal where he was director of procurement. During the War he was an ordnance officer with the 13th Air Force in the South Pacific.

Jay AuWerter, who has been mentioned a time or two in the notes recently, was the subject of an article in the *Cleveland Press* in February. It states, in part: "By strange

coincidence an aggressive young executive, Jay P. AuWerter, 36, has brought together two manufacturing firms which started out here as one company more than 50 years ago. One is the C. E. Squires Co. and the other the Mouat Vapor Heating Co. — originally the Mouat-Squires Co. established in 1901 to make valves, traps, and controls for steam power. Two years after Mouat-Squires started, the owners, T. G. Mouat and C. E. Squires separated. Mouat specialized with considerable success in making steam power equipment for commercial use and home heating. Squires specialized with equal success in making heavier equipment for industrial use.

"AuWerter came into the picture after the war. An aeronautical engineer, he's been a technical writer for McGraw-Hill Corp. and then a major in the Air Force. When he got out of service, he decided to go into business for himself so he started a one-man company — the Atlantic Automatic Co., to make screw machine products. By 1948 his company had prospered so much that he was able to buy the C. E. Squires Co. Recently AuWerter expanded again by acquiring Mouat Vapor Heating which he is setting up as a division of Squires thus bringing the two companies together again after a lapse of half a century! And AuWerter didn't know till afterward that they'd had any connection. AuWerter now has his three companies located at 18502 Syracuse Ave. With him are 30 employees."

The third item was in the Providence, R.I., *Sunday Journal* and states: "The most broadly educated ditch digger and drain layer of our acquaintance is the Rev. Joel S. Carlson, M.A. He studied theology at Upsala, Sweden; received a Ph.B. from Brown in 1927, after doing four years' work in three; took a degree in education at R.I.C.E. in 1933; returned to Brown for his master's in 1934 and put in some time at M.I.T. in 1938 and 1939. He specialized in bacteriology and public health work. Though he was ordained as a Methodist, his church is the Luther's Corner Union Congregational Church in Seekonk, Mass. There he can be found on Sundays. Other days he is likely to be found with a pick in his hand at the bottom of a drainage ditch. Or, in season, skiing or hiking."

"Mr. Carlson, when he had finished at the theological school in Upsala, came to this country, in December of 1919, and settled in Chicago, intending to study medicine and become a medical missionary. He worked weekdays in a grocery store, studied nights, and served a church in Michigan City, Ind., on Sundays. He moved to Akron, where he had a church and studied at the University of Akron. In 1923, he came to Rhode Island. He was simultaneously a pastor in Newport and a student at Brown. He had given up the idea of being a medical missionary but remained in the biological field. By this time he was married and had three children. A sick brother also required his attention. Yet he carried seven courses and earned his living and his schooling. Part of the time, he assisted in the teaching of certain courses."

"After he had finished at Brown and R.I.C.E., he taught adult classes in West Warwick and, from 1934 to 1939, was a

state bacteriologist. He managed to take nine courses at M.I.T. in public health work. When Vanderbilt came in as governor, Carlson went out as bacteriologist. He got a supervisory job on sewer construction in West Warwick. The contractor asked him to solicit work from householders who had to have their houses connected to the sewers. He went into the business himself, subletting the digging. 'But I dug myself twice as deep,' he said. 'I didn't understand the business part of it and I lost money. But I went through with every contract. I had to do all the work myself. I got the license, I put on my overalls, and I've been at it ever since.'

"'People can't understand why I should go out with pick and shovel. But I love hard work. It's the way I always feel best. Another angle is that I can serve the little churches that can't afford to pay a living wage to get a minister, and I can do a good job. If my services aren't satisfactory they can tell me to go any time they want. My church is first. I am always ready to drop my tools to serve my church. When the freezing weather comes and the ground is too hard for digging, I go back to my books and brush up on my studies. Now and then I take a week off for my hobbies. I climb for recreation, and ski, and I like the water. I work very hard with young people. I'm with them all the time.'

"He and his wife have had five children, four girls and a boy, of whom three of the girls are living." The son, an Air Force pilot, was killed in Europe during the War. — ALBERT O. WILSON, JR., *General Secretary*, 24 Bennington Road, Lexington 73, Mass. *Assistant Secretaries*: DAVID E. ACKER, 210 Woburn Street, Lexington 73, Mass.; FREDERICK J. KOLB, JR., 211 Oak Ridge Drive, Rochester 12, N.Y.; RICHARD MUTHER, 116 West 67th Terrace, Kansas City, Mo.

• 1940 •

Alban T. Hallowell and Barbara Miller Gawthrop were wed on February 23. Alban is in the Photo Products Division of Du Pont at Parlin, N.J. Bob Millar, who was recently named as president of the Kelley-Koett Manufacturing Company, a subsidiary of Tracerlab, Inc., has now been elected to the board of directors of the parent organization. Dr. Pasquale J. Pesare has been named medical director for the division of public assistance in the Rhode Island State Department of Public Welfare. Indirectly, your Secretary received word that Roland Daudelin is now employed as a civilian engineer for the U.S. Navy at the Naval Ordnance Laboratory, White Oak, Md.

Last month we had one of the longest columns in *The Review*. This month it is one of the shortest. If you want an interesting column full of news, write to Al. Remember, your Secretary does not make the news but only serves as a vehicle for passing on noteworthy items he receives to the Class. as a whole, through the '40 column of *The Review*. — ALVIN GUTTAG, *General Secretary*, 7114 Marion Lane, Bethesda 14, Md. MARSHALL D. MCCUEN, *Assistant Secretary*, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

Now that the story of our 10th reunion has been told, it's time to go back to pick up some of the items of interest which have accumulated. If the stories are old stuff to some of you, please bear with me while those who haven't yet heard the news are brought up to date.

It's nice to be able to congratulate your friends, and congratulations seem to be in order on all fronts this month. Bill Cadogan has been appointed chief chemical engineer for A. M. Kinney, Inc., consulting engineers and chemists of Cincinnati, Ohio. Bill received his doctorate from Technology in 1948, having won the Eastman Kodak Fellowship in 1946 and the Gerard Swope Fellowship in 1948. Prior to moving to Cincinnati, he was a member of the research staff of the Standard Oil Company of Indiana. Bill has a son and a daughter at present.

Another Course X man making news is Hank Avery: As of last June, he became manager of the Plasticizer Division of the Pittsburgh Coke and Chemical Company, with responsibility for directing the division's sales, production, technical service, and development activities. Note to all Pittsburghers: Hank has been good enough to offer his services as a listening post for this column, so next time you're near the Grant Building, stop in and tell him what you've been up to lately. The more personal touches we can get into the write-up, the better it will be. William L. Fader, who took a master's degree in Business Administration in '41, has been made general superintendent at the Christy Park Works of the National Tube Company in Pittsburgh, a subsidiary of U.S. Steel. He had previously been superintendent of the Shell Forge Department, and then assistant general superintendent at Christy Park. Prior to joining National Tube in October, 1950, he was vice-president in charge of operations and engineering for the Warsaw Elevator Company in Warsaw, N.Y.

Attention all small businessmen in the Boston area: Ed Beaupre is the small business specialist for the Boston Ordnance District, in which job he will aid small firms interested in participating in military procurement, and search for small businesses which are capable of handling some of the procurement needs of the Army. — Davis Dewey, who received his doctorate in Chemical Engineering in '41, has been named vice-president and director of sales for High Voltage Engineering Corporation of Cambridge. He was previously technical director of the American Research and Development Corporation of Boston, and treasurer of an affiliated concern, Ionics, Inc., of Cambridge.

Arthur D. Little, Inc., of Cambridge, has initiated a new policy in the administration of industrial research with the creation of the position of science director. To the new post has been raised Howard O. McMahon, who received his doctorate in Chemistry in '41. In his new job, Dr. McMahon will be concerned primarily with the over-all strengthening, improvement, and integration of the scientific techniques of the firm, rather than responsibility, for execution of research

projects and administration of research personnel. He has been with Arthur D. Little since 1944, and is known for his work in low-temperature physics, including the development of the Collins Helium Cryostat, a mechanical device for liquefying helium gas at a temperature of 452 degrees below zero F., for use in extreme low-temperature physics research. For his achievements in this field, Dr. McMahon was awarded the Edward Longstreth Medal of the Franklin Institute in October, 1951.

The Class is still increasing its percentage of married men (or decreasing its percentage of bachelors, if you prefer). Our congratulations, both official and personal, go to Eleanor Keating and Dick Joyce, who were married in Stratford, Conn., August 11, 1951. Eleanor is a graduate of New Haven Teachers College, with a master's degree from the University of Connecticut, and taught in the Baker School in Darien. Dick, also a graduate of Connecticut, is on the faculty of the Hartford Regional Vocational School. The Joyces are now living in Meriden. Wilma Ann Kallenberg and Lloyd Wilson were married July 29, 1951, in Richmond Hill, L.I., N.Y. Wilma is a graduate of Syracuse University, with a master's degree from New York University; she teaches home economics in Sewanhaka High School, Floral Park. Lloyd is in the standards laboratory of the Sperry Gyroscope Company in Great Neck. — Ushering at his brother's wedding last February was Mert Richardson; his brother, Lincoln, is in the Class of '48.

Dr. and Mrs. Edward L. Zarsky of Brookline announce the arrival of a daughter, Barbara Judith, on March 22. More of us will recognize Mrs. Zarsky as Leona Norman of Course VII. We've seen Leona at Alumni Day gatherings occasionally in the past, but it hadn't come to our attention that she was married. Incidentally, she is Dr. Zarsky, too; perhaps the line should read "Dr. and Dr. Zarsky announce . . ." and so on. — Zach Abuza had to cancel his reunion plans last June because of the arrival of Richard Finn Abuza (8 pounds, 6 ounces), his third offspring. The other two children had the chicken pox the same time, so Zach was pretty busy. Thanks for the letter, anyway, Zach; sorry you couldn't make the trip. The Abuzas are presently living in Davton, Ohio.

By the time this gets into print and reaches all of you, all of the official Alumni Day propaganda should have arrived. However, as a last-minute reminder, the date is June 9, the place is Cambridge, and the hope is that a good many of you will be able to be on hand for the activities. The mailings will provide the details. See you there! — IVOR W. COLLINS, JR., *General Secretary*, 98 Washington Street, Marblehead, Mass. JOHAN M. ANDERSEN, *Assistant Secretary*, Saddle Hill Farm, Hopkinton, Mass.

• 1945 •

Here it is June, 1952, and believe it or not, fellows and gals, we have been away from the hallowed walls of the Institute seven long years. It doesn't seem possible but the old clock on the wall doesn't lie.

The Class of 1945 managed to fill a small table at the midwinter meeting of Greater Boston Alumni, and your Secretary dug up a little information to pass on. Bill Pockman had just arrived in Boston to join Du Pont's New England sales gang after several years of internship in Wilmington. Bill and family are living on Lafayette Road in Hingham and I know they would like to hear from any of you Bostonians who should care to call. Ed Hill, 2-46, reports that Dave Trageser is really climbing up the ladder with Dewey and Almy. Dave is now manager of one of the local Boston plants. The Tragesers live in a new home out on Concord Road in Wayland, Mass. Bill Meade is still kicking around at Stone and Webster while Tom McNamara is doing the same at Raytheon in Waltham. Dave Flood, Class Secretary from 1945 to 1950, is still with Andrew Alfred, an engineering outfit in Boston. Walt Kovalski, originally with our Class, reports that Tom Daggett has left Bethlehem Steel's Fore River Yard to conduct his naval architectural duties in the tried tradition of the U.S. Navy.

George Landon walked down the aisle with Ruth Ann Brewer in Milton, W.Va., last February. Before her marriage, Ruth Ann worked in the employee relation department of Du Pont. Our records indicate that George is associated with the Bond Crown and Cork Division of Continental Can. Florence Ellen Wasserman and Walter H. Harte were married in White Plains, N.Y., on March 23. Walt, one of our Tau Beta Pi boys, is with McGraw-Hill Publishing Company as assistant editor of *Food Engineering* magazine. Walt is also a member of the American Institute of Chemical Engineers. All we have now is the engagement notice, but by the time this is published Harmon A. Poole, Jr., and Nancy Emery Hall of Englewood, N.J., will have been married two months. Hap, as many of you will recall, started Tech with us, joined the Navy, and eventually returned to the Institute to graduate with the Class of 1948. We are happy to say Hap was one of many who has affiliated with our Class; he is now with Bendix Aviation. No wedding date available, but we do have Larry Van Ingen's engagement notice. The engagement of Evelyn Harris, a Briarcliff Manor graduate, presently studying occupational therapy at Columbia, to Lawrence B. Van Ingen was announced in January. Larry, who is with the Socony-Vacuum Oil Company, belongs to the Racquet and Tennis Club of New York and the Piping Rock Club in Locust Valley. On a subject closely related to matrimony, we are happy to announce the arrival of twin boys, William Richard and Peter Furber Hickey, on March 7. The proud parents, Pete and Lou Hickey, are doing well we might add.

We are sorry to report the recall of Jim Felter to active Naval duty. Jim left for Europe in early February. Before recall, Jim was an engineer with the Wickwire Spencer Steel Division of Colorado Fuel and Iron Corporation in Palmer, Mass. Dr. Joseph H. Batsche, formerly with the Florida State Board of Health, has become director of the Jackson County and Washington County Health Department with headquarters in Marianna, Ala.

That's the end of the news items, gang; we now are stating a little guesswork, using changes of address as our basis of thought. Jerry MacKinnon has assumed his duties as sales representative for Good-year Corporation in the Cleveland area. Jerry lives on Jackson Road in Chagrin Falls, Ohio. It appears as though John Howkins is still at the Ingalls Iron Works Shipyard in Pascagoula, Miss. Jim Gurney has received his doctorate from the Institute and now lives in Summit, N.J. The last word we had from Ralph Cromer was that he was building a home down on Miami Beach. It must have been too warm or something, for Ralph and family are now on Long Island in New Hyde Park. The Wire Division of U.S. Rubber really has Don Walsh hopping. It seems as if every year he gets a change of address. Our files now have Don on Gaspar Drive in Dallas, Texas. (Secretary's note to Jake Freiburger and Nick Mumford: Why don't you look him up?) Ed Stoltz and his bride are now living on Hubbard Lane in Wheeling, W.Va., where big Ed still carries the torch for dear old Johns-Manville. Robert Turner must still be with Sperry on "the island," for his new address is New Hyde Park. Dick Battin has left the Mathematics Department at the Institute and is now in the Hood Building in Cambridge.

Since this will be my last effort until the fall season, I shall endeavor to finish off the "green sheets" submitted two years ago. No doubt the news is old, but what is your Secretary to do when you don't feed us the information of your whereabouts and whatabouts. Howard Gerlaugh was in the advanced engineering program at General Electric in Schenectady in June of 1950. Howard married Jeannette Kusoly in August, 1949. Allen C. Crocker graduated from Howard Medical School in 1948 and was at the Children's Medical Center in Boston. R. Tully Bradford, another Course VII Alumnus, received his M.D. at the University of Cincinnati in February, 1948, and at last report was resident physician in ophthalmic surgery at the University of Illinois Research Hospital in Chicago. Dr. Frank Bates, who married Helen Hermes, Simmons'49, in July, 1949, was teaching at the Albany Medical College, Albany, N.Y. In April, 1950, Ralph E. Werley, Jr., reported that he worked for Cities Service before becoming associated with Petroleum Advisers, Inc., of New York City. Ralph and Carolyn Davis were married in June of 1949.

That's it, gang; the well is dry! I didn't have to lie too much this issue, but unless a few of you drop us a two-cent post card during the summer months, there won't be any November issue. (No July issue, for I shall be "wetting down" my last days of single life at the time it should go to press.) To grab an expression from Prexy Chick Street's recent class letter: "Is your M.I.T. education worth a buck a year to you?" We have all been away from Tech seven years. It would seem that by now we should all be in a position where we could weigh this vital question with judgment. Don't express yourself in words, express yourself in dollars. Have a pleasant summer, gang, and we shall see you all in the fall if you send us those

news items! — CLINTON H. SPRINGER, *Secretary*, 44 Church Street, Bristol, R.I. *Assistant Secretaries*: WILLIAM J. MCKAY, 15 Barrett Street, Needham, Mass.; EDWARD STOLTZ, JR., Hubbard Lane, Wheeling, W.Va.

• 1947 •

A few last lines seem in order to close out this year's notes. Reunion is just around the corner, and I would like once more to mention those of our classmates who gave so much of their time and effort in helping to organize the affair. The committee was headed by Jim Phillips, and the chores and dogwork attendant upon any such undertaking were carried out by Arnold Judson, Harl Aldrich, Bob Thirkield, Dick Knight, Norm Holland, Ed Bennett, Sid Smith, and Jack Hill. At present writing we have received one more registration, added to the many we have reported over the past several months. This one from Aaron Newman was accompanied by a birth announcement for the arrival of Lisa Joy Newman on March 23 of this year. Aaron writes that he is presently working at the Electric Boat Company on the atomic-powered submarine for a New York consulting firm.

Louis Goodman, in remitting his one dollar class dues, writes from the Ohio State University: "I am sorry that I will be unable to attend the class reunion, but, as matters stand now, I will be tied up here until at least June 10 or so. I will be at M.I.T. for six to seven weeks, commencing July 7, to help Professor Taylor of Civil Engineering give a soil mechanics course to Corps of Engineers personnel. For a brief newscast, I was promoted to assistant professor of civil engineering in 1950. Since the fall of 1950, I have been supervisor of a research project on erosion control sponsored by the U.S. Navy Bureau of Yards and Docks. Wrote a paper, 'Erosion Control in Engineering Works,' which was published in March."

A letter from Dick Mooney arrived just as I was about to rush these scribbles over to our impatient class notes editor. (I'm always late for the deadline.) After some introductory compliments on these periodic meanderings of mine, which I blushing refrain from repeating, Dick writes: "I have hoped for some time to be on campus for Alumni Day; however, as luck would have it, I am scheduled to be in Los Angeles during the first two weeks of June on business. This trip has been pending for some time and I am sorry that it has to fall during our 'fifth.' I changed positions last August, and am now enjoying a wonderful opportunity with the Dicalite Division of Great Lakes Carbon Corporation. I am the district manager here in Philadelphia, and find this new job most challenging. Prior to my transfer, I had been technical director of Marinette Paper Company, at the Glen Falls plant. I happened to read several months ago that you were in town. If you are again, please call me and we can have lunch together. I am enclosing my card for your 'traveling wallet.' Looking forward to seeing you in the very near future."

Another correspondent just under the wire is Jack Leonard who heads his letter — on Hunt and Willett, Inc. (John W.

Leonard, *Secretary*), stationery — "Response to request for news." It goes this way: "After working for Morrison-Knudsen Company in their Seattle district office, I was sent by them to the atomic plant at Hanford, Wash., Christmas Day, 1947. I worked there on some underground work for 10 months as field engineer. In October, 1948, I was transferred to Grand Coulee Dam in Washington, where I stayed for two years as the engineer on the pumping plant, and at the end, on both pumping plant and some utility warehouses and machine-shop building work. In October of '50 I went to Ketchikan, Alaska, for the company on a utility and paving job as project engineer. Fifty inches of rain in the first seven weeks. On my birthday, January 19, 1951, I quit Morrison-Knudsen Company and started into business for myself. I've got part of a construction company in Canada, one in Washington, as well as an engineering company and an equipment company there. Just winding up the first million dollars worth of work. If the next is like the first I'm going to give up the equipment to the junkman, the unpaid bills to the bonding company, the men to the union business agents, the fancy stuff to a few resident engineers, and see if they can make it work, the equipment contracts to the internal revenue department, and roach deer, salmon, and bootleg hooch to the Indians. Don't know if I'll make it for the fifth reunion. Got 6,800 yards of concrete to pour before then at both ends of a tunnel with the diverted Boise River coming up at both ends. If I do make it out, it will be the biggest drunk Boston ever saw. See John Toland from time to time in Spokane. He is working for Inland Steel, is remodeling a house and raising kids. Not married myself yet. We don't count squaws or coltsches out here. Can't afford to carry equipment companies, material suppliers, internal revenue, payroll, and a wife too."

One of our classmates very much in the news is Hector Acebes. The March 25 issue of *Look* magazine devoted seven pages to Hector and some acquaintances under the title "Orinoco Adventure." A fascinating tale of Hector's recent attempt to reach the headwaters of the Orinoco, the article is illustrated by some fine photographs of semisavage Indians taken by Hector. — The lecture circuit has been livened somewhat by two of our classmates. Luther Chien spoke on "The Life and Customs of the Chinese People" at the Woodbury, Pa., Y.M.C.A. in February. Luther is employed in the development section of the Chambers Works of the Du Pont Company. Adelaide Toombs, who was a special student for two years in ceramics, spoke on the subject before the Quinshipaug Woman's Club of Milford, Mass., recently. Adelaide is welding her knowledge of art and ceramics into producing ceramic portraits of children.

One last item, and that is the wedding of Dan Carnese to Josephine Condello of Chestnut Hill, Pa. The couple were married last month. In the intervening months between these notes and the first issue in the fall, I expect to receive a multitude of letters from you. Don't disappoint me, please. Newspaper clippings are a very poor secondhand method of learning of all your doings. See you at

the reunion. — CLAUDE W. BRENNER, *General Secretary*, Room 33-316, M.I.T., Cambridge 39, Mass.

• 1948 •

The millennium has arrived and your Secretaries literally wept with joy — this last month brought no fewer than five letters from old classmates. We shall quote from them liberally after briefly running over the month's vital statistics. In a note received from Ivor Collins, *Secretary* of '41, we learned of the engagement of Lincoln Richardson to Kitsy Wood of Wellesley Hills. Lincoln, we understand, is at present doing research at M.I.T. More engagements: Herb Kindler to Phyllis Pitegoff in Jackson Heights, N.Y.; Alvin Siteman of Clayton, Mo., to Ruth Levinson; and Carl Boll to Shirley Simmonds. Yes, that's Carleton Hunter Boll, 3d, who is now vice-president and general manager of Solvents Recovery Service, Westfield, N.J. We have one wedding to report this month: On March 16, Mark Connelly was married to Helen Cooke. Miss Cooke attended Wellesley, and the couple plans to live in Boston. In the son-and-heir department, we have received word of a son, Peter Cooper, being born to Boni and Margaret Martinez on March 18. Boni added a note telling us of his new position as chief of the Stream Pollution Research Section, U.S. Bureau of Mines, in College Park, Md. We quote: "If any old classmates have problems in stream pollution, I may be able to help them — no fee, of course!"

One of our coed grads, Judith Turner, was recently honored by *Mademoiselle* magazine for her fine talent as an architect. The Lamson Corporation of Syracuse has informed us of the addition of Earl Hoyt to its engineering staff. Earl, who will be associated with the Dallas technical staff upon joining Lamson, previously was associated with the Link-Belt Company of Chicago. Two former '48 men were awarded degrees at Harvard recently: Dick Jones received his Ph.D. and Donald Mork, a former "Quiz Kid," received his B.A., *cum laude*. He is also one of 10 American students chosen through auditions in Los Angeles and New York to attend the Royal Academy of Dramatic Arts in London.

A long letter from Mal Reed tells us that he is still associated with Tracerlab, Inc., of Boston as a product engineer in the radiography department: "Besides being responsible for the 'hot lab' operations for making industrial radiographic Cobalt-60 sources and the engineering for lead shielding containers and handlers for high-level radioactivity, I dabble in special projects involving film calibrations and liquid level gauges using radiocobalt. Besides that, I'm enjoying my existence as a bachelor, am taking part in a play 'Down in the Valley,' which my local church group is producing, have enjoyed the skiing season, and am looking forward to the sailing season. At the mid-winter meetings I ran into several of the Class of '48, including Howard Morash and Howard Whitman. The meeting was quite informative and stimulating and it was one of the best attended midwinter meetings that the Institute has ever had."

Bob Cook's wife, Shiela, writes that Bob is with the Duplan Corporation as assistant to the weaving general manager. They now have two boys and have recently made their home in Lincoln, N.C. From New York, we hear from Hal Field who is now associated with the law firm of Paul, Weiss, Rifkind, Wharton and Garrison: "The firm has a general practice; I have been doing mostly litigation and corporate work, and lately some theatrical work as well. It's surprising how many problems exist which we never had to worry about in the Tech Show — a production which, you recall, seemed to be sufficiently complex. This legal life is somewhat removed from electrical engineering, but on a few occasions the engineering background has enabled me to comprehend problems which otherwise might have been quite troublesome. Classmate Pete Spitz is still working for Standard Oil, and, after a few false starts for far-away places, was recently sent to work for a few weeks in the outer reaches of Canada. A couple of weeks ago I ran into Bill Bangser — of all places while walking down Madison Avenue in the afternoon rush hour. Bill is working for his father; I can't recall just what the business is, but if he were writing you, he would remember all details about me because he took a memory course and never forgets any more."

Do we have to add that if you are reading and enjoying(?) these notes and have not yourself contributed of late, you should. — WILLIAM R. ZIMMERMAN, *General Secretary*, 1604 Belmar Road, Cleveland Heights 18, Ohio. RICHARD H. HARRIS, *Assistant Secretary*, Lovell Road, Holden, Mass.

• 1949 •

Andy Lang has been appointed executive secretary for the M.T.M. Association for Standards and Research, an organization founded to promote the use of a methods-time measurement technique to improve methods of production. Following graduation, Andy was placed in charge of the research then being conducted on M.T.M. by Methods Engineering Council, management consultants in Pittsburgh and New York. The Langs and daughter Sandra are living in Wilkesburg, Pa. — Archie Harris has joined the staff of Arthur D. Little and is doing personnel work and scheduling for the Mechanical Division. Previously he was attached to the personnel staff of Chevrolet in Norwood, Ohio.

While in Washington, I enjoyed a few beers with Kemon Taschioglou who had been reassigned and was on his way to the Air Force Cambridge Research Center as a Development Officer in electronics. Received a letter from Gene Drucker who arrived in Monterey, Calif., with the Naval Postgraduate School from Annapolis. At present Gene is an assistant professor of mechanical engineering and

reports Ivar Stockel is also on the faculty in the same department. Ivar's specialty is elastic body mechanics while Gene is primarily working with thermodynamics and heat transfer.

Lloyd Jonas writes that the family, which includes Susan (aged four) and David (aged one and one-half), are enjoying Corning, N.Y. Lloyd started out as a development engineer in the Corning Glass Works and is now a product engineer in the plant equipment line of the Technical Products Division. In order that the title wouldn't throw me, he added he was working with "heat exchangers, glass reactors, and special process equipment." He has passed the E.I.T. exams and hopes to make professional engineer this spring. Melvyn Mickevich has joined the Lanston Monotype Machine Company as a technical assistant in their home office. Roberto Galvez is visiting this country from Honduras to negotiate with the C.A.A. on behalf of his country. Herbert Hershenson set a bit of a record by receiving his doctorate at the age of 23 from Tech.

Engagements: Brad Endicott to Brigit Carstensen of Copenhagen, Denmark (Brad is with Sears Roebuck in Chicago); David Felbeck to Frances Myska of Rutland, Mass. (Dave is instructing in Course II while working for his doctor's at M.I.T.); Lieutenant Richard Noe to Patricia Charlton of South Orange, N.J. (he is stationed at Wright-Patterson Air Force Base, Dayton, Ohio); Harold Vitagliano to Patricia Ehrlich of Baltimore, Md. (Harold is stationed at the Aberdeen Proving Ground).

Weddings: Orlien Becker to Margot Malgodi on January 27 in Boston, Mass. (Orlien is with Raytheon); Jack Baker was the best man; Walter McSweeney to Patricia Quinn on February 16 in Watertown, Mass.; Kenneth Prytherch to Sofia Mascio on January 5 in New York (Ken is a salesman for General Dvestuff Corporation); Richard Robins to Dorothy Johnson on January 1 in Stamford, Conn. (Dick is with the American Optical Company); Walter Wagner to Barbara Alden on March 2 in Riverdale, N.Y. (Walt is associated with McGraw-Hill Publishing Company as the western editor of *Factory Management and Maintenance*); Lieutenant Commander Williston Shor to Dorothea Kissam on February 10 in Princeton, N.J. — CHARLES WILLETT HOLZWARTH, *Secretary*, 1421 Meridian Road, San Jose 25, Calif.

• 1951 •

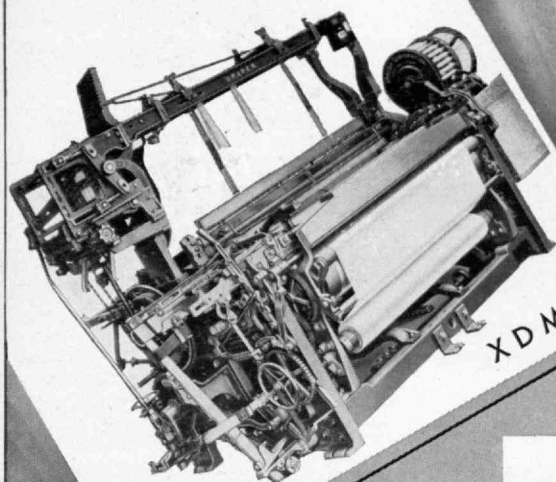
Once more it is time to lay aside various casebooks and ye olde slide rule and dig into the mailbag to see what new items we have about '51. Unlike previous months, the number of cards and news clippings are few. Perhaps it is because of the "spring fever" weather or perhaps the guys and gals of '51 are settling down a bit.

Only two marital notices have arrived: Martha Blum of Bronx, N.Y., became the wife of Carl Burtoff; the wedding took place in March. And Albert Paine and Noelle Cornwell of Marshfield Hills, Mass., walked down the marital path in February. Al is now employed at Lever Brothers in Cambridge. With regard to engagements, Dick Bachtell became engaged to Mary Jane Smirt of Cleveland. Mel Rubin and Barbara Roller of Chelsea, Mass., announced their engagement and are making plans for an August wedding. Mel is currently employed by the consulting engineering firm of Congdon, Gurney, and Towle, Inc., of Boston.

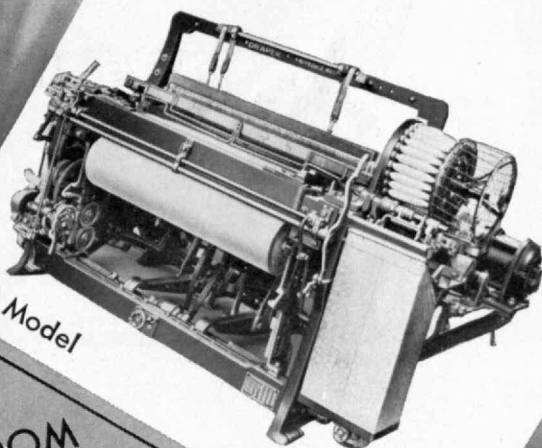
Lloyd Smiley informs us that he finds Course XV and Professor Goodwin's management laboratory course to be of great aid in his present work. Lloyd started out as a plant layout engineer with the Arma Corporation. After two months, he was promoted to special process engineer doing cost savings work. Recently Lloyd received a new work assignment which placed him in the position of general assistant to the manufacturing superintendent. Keep up the good work, Lloyd. A short note from Gerry Burns tells us that Roger Harsch is employed by Allis-Chalmers. Gerry had a chance to chat with Roger when Roger was taking an eight-week training course in Cincinnati. Roy Niemela sent in a note to report that he was still alive and that work at Wright-Patterson was keeping him busy. Roy hopes to fly in to Boston to visit the boys in this vicinity.

Rachel Goetchius responded to a card from your Secretary asking her about her activities. She writes: "After graduating last June and taking a little vacation, I went to work for the firm of Richmond and Goldberg, Architects and Engineers, here in Boston. I'm still there, working in the drafting room, and enjoying my work very much." Fred Bumpus reports: "Your card caught me at just about the right time. I'm leaving home shortly for temporary duty at the New York Port of Embarkation, and then, in about three weeks, I'll be heading for duty in Europe. I've been in the service now for about eight months, my time being about evenly divided between Fort Lee and Fort Devens."

Glenn Battaglia of the "B" School is making plans to go on the industrial tour of Europe which has been promoted by the XV Department. I don't know if I reported this previously, but at any rate, Marv Grossman is heading for London where he will spend the summer working for an engineering firm. As for your Secretary, a few weeks ago I received notice that I shall be discharged from the Naval Reserve. I expect to spend the summer working for E. R. Squibb and Sons as a production trainee in the Antibiotic Division. In signing off, may I ask once more for cards or letter concerning your activities? — STANLEY J. MARCEWICZ, *Secretary*, Morris D-34, Harvard Business School, Boston 63, Mass.



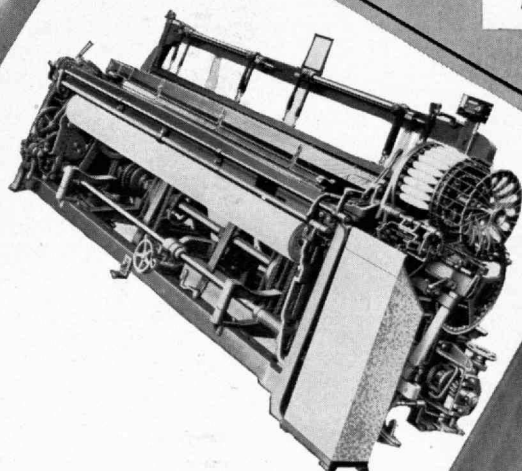
X D Model



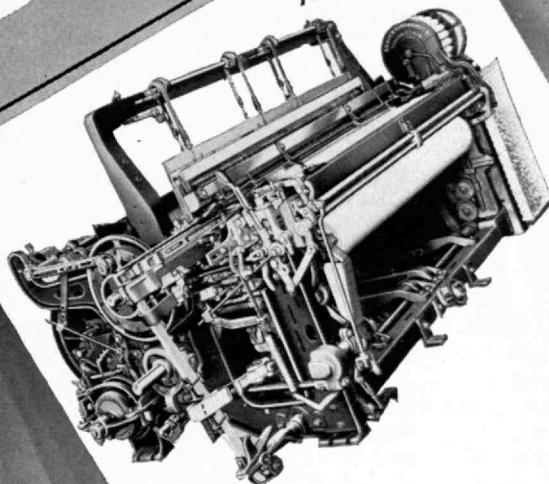
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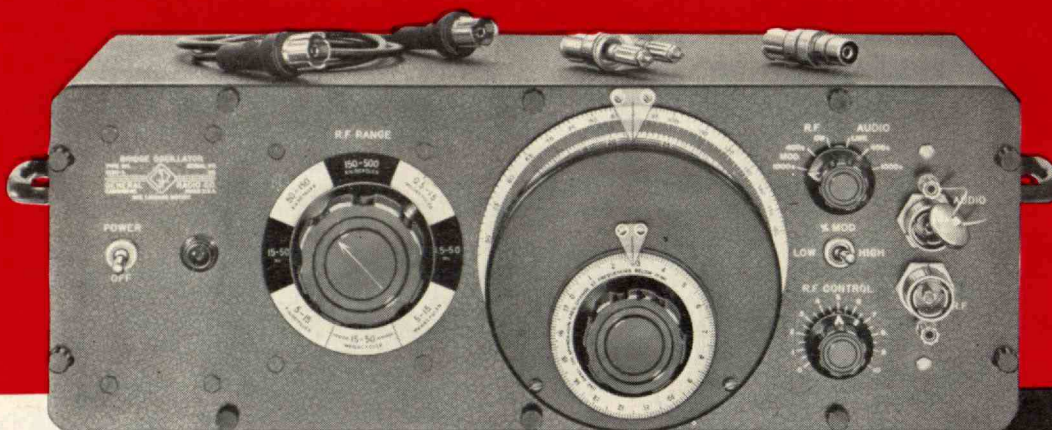
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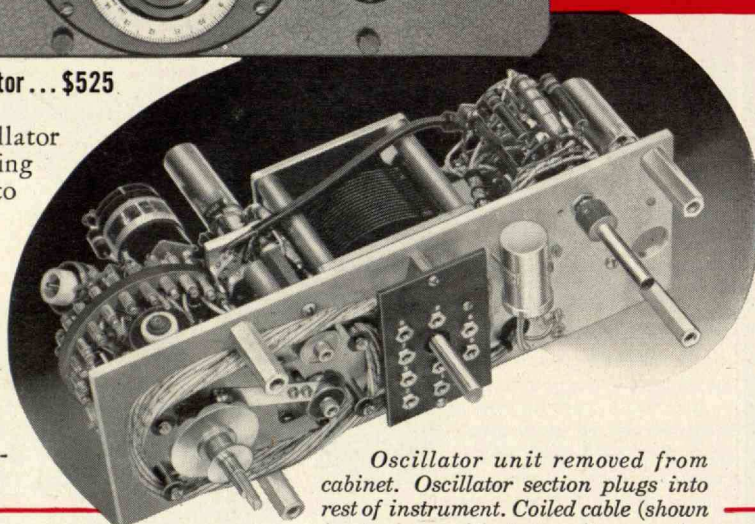


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INCREMENTAL FREQUENCY DIAL — vernier on tuning dial indicates 0.1% frequency increments of main dial division

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